EXPLORING KNOWLEDGE OF CANADIAN VALUES AND SOCIAL AXIOMS IN INTERNATIONAL AND LANDED IMMIGRANT STUDENTS' ADAPTATION TO CANADA

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ABSTRACT

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This thesis was an exploration of the relationship between the host cultural knowledge of newcomers and their behavioural and psychological adaptation to the host culture. Utilizing a theoretical and applied approach to this research, 160 international and landed immigrant students at the University of Saskatchewan completed a questionnaire examining their perceptions of Canadian values and social axioms. Values and social axioms are guiding principles and mediating beliefs, respectively, that individuals use to organize, understand and facilitate physical and social functionality within a culture (Schwartz, 1994; Leung et al., 2002). Despite the complexity of the research task, there was marginal support for the main hypothesis that the participants' understanding of Canadian cultural knowledge was related to adaptation to a host culture, specifically psychological adapation. Furthermore, the results indicate that the participants' knowledge of Canadian values and social axioms was differentially related to psychological and behavioural adaption to Canada.

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Exploring Knowledge of Canadian Values and Social Axioms in International and Landed Immigrant Students' Adaptation to Canada

This research is a study of how newcomers to Canada psychologically and behaviourally adapt to their new sociocultural environment based on their understanding of that environment. Newcomers to a host culture interact on a daily basis with each other and the host society, and begin to negotiate an understanding of their sociocultural environment. This understanding is an outline of the function of their new society and what is expected in terms of social behaviour in order to be rewarded with employment and other social opportunities. Utilizing this perspective, this study will take a cultural-learning approach to how individuals adapt to a host culture (Searle & Ward, 1990; Ward, 1997, 2006; Ward, Bochner & Furnham, 2001), which relies on the belief that culture is a learned understanding of how a sociocultural group understands their social environment and the appropriate and expected way to behave (Triandis, 2000). As such, all cultural members, new or old, must learn and interpret the cultural milieu, and the more concordant their interpretation is with the cultural "reality," the more social opportunities that are available. How newcomers learn about their new host culture, what type of information is utilized, and how it affects their adaptation process has not been widely researched.

This study is the first in a program of research that will look at culture as a knowable social force that can, and does, influence how people function in society, particularly newcomers from different cultures. Immigrants, refugees, trans-national workers and international students contend with culture daily in their attempt to understand how to act and what is expected from the new sociocultural environment. In

this formative process of adaptation, newcomers must make decisions about how to adapt behaviourally (Ryder, Alden & Paulhus, 2000; Searle & Ward, 1990) and psychologically (Berry, 1989, 1997; Berry & Sam, 1996) to their new sociocultural environment. Behavioural adaptation refers to the knowledge of culture-specific social behaviours, and psychological adaptation refers to an individual's well-being in interactions with a new culture. As experts in the process of adaptation, newcomers can offer a glimpse into the accuracy and applicability of current sociocultural knowledge in the context of adapting to a new host culture.

One approach that may be useful in exploring the use of learned cultural knowledge in the psychological and behavioural adaptation process would be to look at superordinate, or trans-situational, cultural knowledge, like values (Schwartz, 1994; Schwartz et al., 2001) and social axioms (Leung, Bond & Schwartz, 1995; Leung et al., 2002). Values are certain 'ideal' modes of conduct or end states of existence that can mediate behaviour across situations (Rokeach, 1973, 1979, 1982; Schwartz, 1994). Social axioms are generalizable social beliefs that improve behavioural functionality in a sociocultural environment through the perception of causal or correlational relationship between two entities (Leung et al., 2002). Taken together, these two elements of culture should provide cultural members with preferred goals and behavioural guidelines to achieve social opportunities. There should be advantages to learning a broad, generalized cultural knowledge that is non-situation specific for individuals in a new host culture. When cultural knowledge of values and social axioms is learned, an individual has access to information that allows him or her to orient his or her social expectations and behaviours toward an expected and appreciated manner in more social situations,

which should increase the amount of social opportunities awarded to the newcomer. While situation-specific knowledge can be useful for a specific set of circumstances or situations, truly mastering these situations and transferring this knowledge to other situations relies somewhat on an understanding of shared intentionality of social behaviour (Tomasello, Carpenter, Call, Behne & Moll, 2005). Without a psychological understanding of the intention that motivates a social behaviour, the most that an individual can do is imitate the situation. As such, the level of adaptation that occurs for a newcomer would be dependent on knowledge of the intentions that motivate the individuals in a social situation (Tomasello et al., 2005). Therefore, it could be hypothesized that host cultural knowledge that has broad versatility in various sociocultural situations will have a strong relationship with adaptation; specifically, learning about a host culture's values and social axioms should aid in positive psychological and behavioural adaptation to the host culture.

Relevant Social Issue

In Canada, almost one fifth of the population is foreign born, which amounts to over 6.1 million people or 19.2% of the population (Statistics Canada, 2006). Canada is a nation that was built by immigrants and relies heavily on immigration to continue to grow socioeconomically (Pettigrew, 1998). The most recent 2006 census findings attribute two-thirds of Canada's population growth from 2001 to 2006 to 1.2 million new immigrants (Statistics Canada, 2007). Canada's success as a destination for migrants is directly related to its reputation as a world leader in the promotion of cultural diversity through multiculturalism policies. The enactment of the 1988 Canadian Multicultural Act ensures that "multiculturalism is a fundamental characteristic of the Canadian heritage

and identity and that it provides an invaluable resource in the shaping of Canada's future" (Canada, 2006). From coast to coast to coast, Canada is committed to ensuring equality through social programming and policies that support current and future citizens.

An inclusive society can only be achieved through multiculturalism if a nation recognizes that demands are placed unequally on people of different cultural groups (Parekh, 2000). The equitable policies promoted by multiculturalism often benefit those community members who are similar in appearance, values, social beliefs or ideologies to those in the dominant society. Looking at Canada's current population demographics, the changes in the ethnic composition of the population illustrate the importance of developing a strategy for understanding the effects of multiculturalism on all participating cultural groups, including dominant and minority groups. Historically, most immigrants to Canada have come predominantly from western European countries, like Britain, France, Germany or Italy (Deaux, 2006). These immigrants share similar values and beliefs with each other and with the dominant Euro-Canadian majority. As such, these newcomers were able to assimilate or integrate into Canadian society more easily than non-Western immigrants. Current immigration patterns show that most immigrants to Canada are born and raised in countries that are not considered Western-based. For example, approximately 77% of newcomers to Canada between 1991 and 2001, were born outside of North America or western Europe (Statistics Canada, 2003). Furthermore, 40% of these immigrants were from collectivist countries like China, India, the Philippines, Hong Kong, Sri Lanka, Pakistan and Taiwan (Statistics Canada, 2003). These changes in the ethnicity of the immigrant population and the increased cultural

diversity of Canadian society are important factors to explore if Canada intends to maintain its reputation as a equitable multicultural society (Gundara, 2001/02).

Focusing on the most vulnerable population, new culturally-diverse immigrants, social research will have to explore their experiences to ensure social inclusiveness (e.g., equitable access to social opportunities and goals) and the successful operation of multicultural policies. The more distant a newcomer's cultural background, the more complicated the process of adapting to a new host culture can be. Cultural differences of understanding the host sociocultural environment may affect how effectively newcomers can participate in Canadian society (Hofstede, 1984; Leung, Bond & Schwartz, 1995). To facilitate Canada's multicultural objectives from an applied perspective, social researchers should understand how new culturally meaningful knowledge is understood and how this knowledge is negotiated as it is used to address behavioural and psychological adaptation needs. By doing so, more effective support could be offered to newcomers to facilitate and increase their quality of life.

Adaptation to a Host Culture

Newcomers to a host culture, such as immigrants, refugees, or sojourns (i.e., international employees and students), come into first-hand contact with a new culture and they change (Ward & Rana-deuba, 1999). Triandis (2000) defined culture as:

> A shared meaning system, found among those who speak a particular language dialect, during a specific historic period, and in a definable geographic region. It functions to improve the adaptation of members of the culture to a particular ecology, and it includes the knowledge that people need to have in order to function effectively in their social environment (p. 146)

Therefore, when a newcomer with a different cultural background becomes involved with a new host culture, he or she must adapt to this new sociocultural environment by learning about the host culture (i.e., the shared meaning system). Theoretically, this process of adapting to a host culture falls within the scope of cross-cultural literature of acculturation. For clarity, this review will focus on the understanding of adaptation to a host culture.

The most widely used understanding of cultural adaptation was first proposed by Graves (1967) as the behavioural and psychological changes that occur in individuals that interact, first-hand, with members of other cultural groups. This idea was later expanded by Berry (1970, 1989, 1997; Berry & Sam, 1996) to include the assumption that individuals who are in the process of adapting to a host culture must endorse attitudes and behaviours that reflect two issues: the maintenance of their original culture and their level of participation in the host culture (Berry & Sam, 1996). Contained within these models of acculturation is the premise that newcomers to a host culture undergo two forms of adaptation: psychological adaptation (Berry, 1997, 1989, 1970; Berry & Sam, 1996) and behavioural adaptation (Ryder, Alden & Paulhus, 2000; Searle & Ward, 1990; Ward & Rana-deuba, 1999). Both types of adaptation are interrelated, but conceptually distinct from each other (Searle & Ward, 1990; Ward & Kennedy, 1994). Any type of research examining newcomer adaptation should include both psychological and behavioural measures of adaptation to assess cultural competency and coping (Van de Vijer & Phalet, 2004).

Behavioural adaptation refers to an individual's ability to behave well in host cultural situations and social interactions. This is achieved through the effective

acquisition of behaviours, social skills, language mastery, and cultural knowledge of the host culture (Ryder et al., 2000; Ward et al., 2001). Newcomers who participate in the host culture's activities are more likely to have learning experiences that facilitate adaptation and personal effectiveness in the host culture (Ryder et al., 2000). In comparison, psychological adaptation refers to the well-being that an individual feels while interacting with his or her host cultural environment (Searle & Ward, 1990; Ward & Kennedy, 1994). Psychological adaptation and well-being are related to cultural identity, and good mental health (Berry & Sam, 1996). Individuals that experience positive psychological adaptation are more likely to have positive measures of personal satisfaction, self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Lay & Safdar, 2003; Ryff, 1989; Ryff & Singer, 1996).

If an individual's original cultural attitudes or behaviours clash with his or her new host culture, then this individual will experience cultural conflict resulting in negative behavioural and psychological issues (Berry & Sam, 1996). For example, an inability to resolve cultural conflicts can result in an individual developing problems with host cultural interactions that limit access to social opportunities. Chronic issues of cultural conflict can lead to acculturation stress, a negative psychological response to the new cultural environment (Burvill, 1984). When an individual experiences prolonged instances of acculturative stress, they tend to have a lower level of behavioural functioning and psychological well-being that leads to a generally lower quality of life. In order to cope with cultural conflict, an individual must establish and increase positive host culture behaviours, while developing a strong sense of psychological well-being.

Therefore, behavioural adaptation is related to the amount of host cultural participation (Ryder et al., 2000) and psychological adaptation as it related to an individual's wellness and description of positive psychological functioning (Lay & Safdar, 2003; Ryff & Singer, 1996).

Both psychological and behavioural adaptations have been found to vary across situations and time (Berry & Sam, 1996). Everyday, newcomers must negotiate new cultural circumstances using whatever knowledge they have about the host culture to make appropriate decisions (Bond, Leung, Au, Tong & Chemonges-Nielson, 2004b). As that knowledge grows or changes, there is a potential change in the adaptation process. Unfortunately, very little is known about what types of information immigrants use to adjust behaviours and influence their adaptation to a host culture (Rudmin, 2003). Triandis (2000) indicated that a 'shared meaning system' does exist in a culture, but there is little other research that defines this system of knowledge. Research should be conducted that assesses the different types of cultural knowledge that may affect a newcomer's adaptation to a host culture.

Values and Social Axioms

The most dominant cross-cultural construct to be used in the defining of a culture has been values (Hofstede, 1984, 2001; Rokeach, 1973; Schwartz, 1994; Schwartz & Bilsky, 1990). Values are beliefs about certain ideal modes of conduct that are preferable to other modes of conduct (instrumental values) or certain ideal end states of existence that are preferable to other end states of existence (terminal values) (Rokeach, 1973). An example of these superordinate goals might be "thinking that it is important that every person in the world be treated equally" or "enjoying pleasure is

important for individuals." While important progress has been made using this cross-cultural construct, additional dimensions of culture have been explored to increase the ability of researchers to understand and explain culture and cultural differences. One such construct is social axioms, which are mediating beliefs that individuals use to organize and understand their social and physical worlds in order to enhance survival and functionality (Leung et al., 2002). An example would be "powerful people tend to exploit others" or "harsh laws can make people obey." Together, values provide individuals with future goals, and social axioms provide guidelines for directing social behaviour toward those goals.

Cross-cultural researchers have examined both of these concepts of culture at two levels: the culture-level and the individual-level (Smith & Bond, 1999; Bond et al., 2004a). The examination of culture using culture-level analysis allows generalizations to be made at a societal level, whereas using individual-level analysis allows explanations to be made at the individual level (Smith & Bond, 1999). The purpose of this research is to explore and examine the effect of cultural knowledge on newcomers' adaptation to a host culture. This is an individual-level analysis and, therefore, constructs of cultural knowledge have been selected that reflect the individual-level process. An important point of clarity for this study is the necessity to examine newcomer participants' perceptions of Canadian culture. To achieve this type of analysis, newcomers will be asked to reflect on the *Canadian* expression of values and social axioms. This use of a third-person reference to *Canadians in general* may be perceived as a culture-level measure, but, in fact, it is an individual level analysis[1].

[1] Cultural knowledge at the individual level is related to cultural knowledge at the culture level (Hofstede, 2001). To explain, cultures endorse preferred values or beliefs for cultural members through institutions, rituals, heroes and

Values and social axioms may be related to each other, even though these two cross-cultural constructs have been shown to uniquely explain culture and culturally normative behaviour (Bond et al., 2004b; Kurman & Ronen-Eilon, 2004; Safdar, Lewis & Daneshpour, 2006). Several researchers have hypothesized that an individual's beliefs (i.e., values, social axioms and attitudes) are aligned in a hierarchical system or continuum ranging from self-conceptualizations and values downward to generalized beliefs and, finally, to attitudes about specific objects or events (Ball-Rokeach, Rokeach, & Grube, 1984; Grube, Mayton & Ball-Rokeach, 1994; Rokeach, 1981). The basic principle of these belief system hypotheses is that those beliefs that are higher up in the hierarchy have a broad impact on the whole system, including the beliefs lower in the hierarchy (Rokeach, 1973, 1979). As such, beliefs are arranged according to the level of influence that they have on a broad range of beliefs and, consequently, behaviours.

This hierarchical belief continuum provides a cognitive and motivational map (e.g., decision making) for determining the likelihood of triggering an action or behaviour (Rokeach, 1980). For example, the least effective beliefs are attitudes, which are basic existential, evaluative, prescriptive-proscriptive, and causal beliefs about an object or situation (Ball-Rokeach et al., 1984). The specificity of these attitudinal beliefs means that only behaviours that are related to the attitude are affected, and there is little or no

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specific sociocultural beliefs, which are internalized unconsciously by cultural members during the developmental stages of childhood (e.g., 2 to 14 years). As members interact in social situations, they use these cultural values and social beliefs as their own, unconscious of the sociocultural source, to guide and determine appropriate behaviour. Social interactions with other cultural members act to validate and endorse the appropriateness of these values and social beliefs, with each person developing their own version of the same set of cultural beliefs. The culture-level expression of this cultural knowledge is, at its most simple level, an aggregate measure of all cultural members' expression of values and beliefs. As such, every culture has an unique level of expression of values and social beliefs that are arrived at by the generally agreed-upon endorsement of individual-level beliefs that are supported in social interactions with other cultural members (Bilsky & Schwartz, 1994; Hofstede, 1984; Hofstede & Hofstede, 2005). This explanation demonstrates how this study will be able to conduct an individual-level analysis using international and landed immigrant student participants reports of "Canadian" values and social axioms as understood from their social interactions with Canadians in Canada.

consequence on the values underlying them. Conversely, changes in superordinate beliefs, such as values, can have dramatic effects on a broad range of behaviours and attitudes. While social axioms have not been thoroughly examined in this capacity, hypothetically, these mediating beliefs would naturally fall between values and attitudes within this continuum.

Through the examination of a broad spectrum of superordinate cultural beliefs, a researcher may be able to yield a more complete description of culture. Although interrelated, values or social axioms both have provided unique contributions to explaining social behaviour. Future research will have to focus on examining the relatedness and distinctiveness of these cross-cultural constructs. An increased understanding of this relationship will allow researchers to arrive at a better understanding of culturally motivated behaviour, such as adaptation to a new host culture.

Cultural Values. A substantial amount of research has established that values are a fundamental element of culture (Hofstede, 1984, 2001; Rokeach, 1980, 1981; Rokeach & Mezel, 1966; Schwartz, 1994; Schwartz & Bilsky, 1990), and are influenced by acculturation (Domino & Acosta, 1987; Feldman, Mont-Reynaud & Rosenthal, 1992; Georgas, Berry, Shaw, Christakopoulou & Mylonas, 1996). Recalling that values are beliefs about certain ideal modes or end states of existence (Rokeach, 1973, 1979), as such, they are conceptually abstract and finite in number, which makes these social constructs ideal as universal expressions of social understanding (Grube et al., 1994; Singelis, Hubbard, Her and An, 2003).

Value changes at the culture level occur slowly over long periods of time due to the constant reinforcement that occurs from each cultural member. Occasionally, substantial environmental or ecological events such as war, disaster or technology can cause a shift in values at the culture level, but otherwise they are stable and consistent (Hofstede, 2001, 1984). Value changes at the individual level have most often been explored through the study of acculturation. Due to the recent conceptualization of value theory in cultural phenomena, there are relatively few studies which have explored the relationship between acculturation and the expression of values. One of the earliest studies looking at this relationship was conducted on 42 high- and 42 low-acculturated Mexican-Americans (Domino & Acosta, 1987). This research compared Mexican-American participants (*high vs. low*) with an archived national normative sample and a matched sample of 62 Anglo-Americans. Domino and Acosta (1987) found that the highly acculturated Mexican-Americans showed a greater level of similarity in value expressions with the national norm and the Anglo-Americans than did the low acculturated Mexican-Americans. This early study establishes that there is a relationship between acculturation and the expression of host culture values, but fails to explain how host cultural values influence acculturation.

A similar acculturation study conducted by Feldman et al. (1992) compared the value expression of first- and second-generation Chinese youths living in two Western countries with normative samples from these two Western countries and the country of origin, China. Acculturation was operationalized as intercultural contact with a host culture leading to a shift in value expressions away from a Chinese normative sample and towards the host culture's normative sample (Feldman et al., 1992). To examine

this shift in values, this research used seven samples: first- and second-generation Chinese immigrants to Australia and the U.S. (*four groups*) that were compared with a normative sample from the corresponding host country, Australia or the U.S., and a Chinese sample from Hong Kong. The results showed that the largest shift in value expression occurred for the first-generation Chinese immigrants away from the original Chinese culture's value expressions and towards the host culture's expression. There were modest differences in value expressions from first- to second-generation immigrants and from second-generation to host culture's normative sample. These results were similar for both Australian- and American-Chinese immigrants, even though the Chinese communities are quite different in each country according to size, organization and power (Feldman et al., 1992).

This multi-generation study shows that a relationship exists between a host culture's value expression and the acculturation process for newcomers. As each generation experiences intercultural contact with the host culture there is a shift in their expression of values, resulting in an increased similarity in values with the host culture. Georgas et al. (1996) found a similar pattern of change across generations for Greek immigrants in Canada, Germany and the Netherlands. As such, it appears that values change quickly after initial contact with the host culture, then slowly stabilize in favour of the host culture's expression of values.

These studies provide evidence that values are more than likely part of the process of culture shedding and learning (Berry, 1997). Furthermore, the process of shedding and learning host culture value expressions is a potent one that occurs in a varied pattern across generations of individuals and cultures. The biggest limitation for

these studies was the lack of an actual acculturation measure looking specifically at psychological or behavioural adaptation to a new culture. Each of these studies used changes in the expression of values as a determinant of acculturation, which should be considered a measure of assimilation rather than adaptation. It is difficult to generalize these results beyond suggesting that an individual's value expression can change through intercultural contact. Future research should explore acculturation as influenced by knowledge of a host culture's values in order to establish the importance of values as descriptors of culture and to clarify its role in an individual's adaptation to the host culture.

The most recognized values theories in cross-cultural research were proposed by Schwartz and his colleagues (Schwartz, 1994; Schwartz & Bilsky, 1990; Schwartz & Sagiv, 1995; Schwartz et al., 2001). Using a psychological approach, Schwartz measured values based on the premise that there is a universal set of values and value-types that can be structured dynamically to describe individuals (*micro-level*) and cultures (*macro-level*) (Schwartz, 1994). Specifically, he proposed that a dynamic relationship of values within a structure could be used to describe and explain people and, by extension, their culture. Earlier, Schwartz and Bilsky (1990) defined values as desirable, trans-situational goals, varying in importance, that serve as guiding principles in people's lives. Schwartz determined that he could not readily measure the substantive content of values directly; values have to be measured through motivational goals associated with each value (Schwartz, 1994). This motivational approach is based on the argument that all humans must cope with demands of life by transforming fundamental survival needs into specific values. Using this motivational perspective,

values were identified using three universal needs that are experienced by all human beings: the biological needs of an organism, the need for coordinated social interaction, and the need for the smooth functioning and survival of an individual's in-group (Schwartz, 1994).

Schwartz surveyed over 25,000 participants in 44 countries across all continents (Schwartz, 1994). The sample was heterogeneous (using different occupational groups and ages). The results identified two orthogonal dimensions: (1) Self-transcendence versus Self-enhancement, and (2) Openness to Change versus Conservatism. The self-transcendence versus self-enhancement juxtaposes universalism and benevolence values against power and achievement values. Similarly, the openness to change versus conservatism dimension places values of security, self-direction and stimulation in opposition to conformity and tradition values. Within these two dimensions, there are ten types of values that relate to the basic biological, social and functional needs, expressed as values, for the human condition: Power, Achievement, Hedonism, Stimulation, Self-direction, Universalism, Benevolence, Tradition, Conformity and Security (Schwartz, 1994; see Table 1).

The structural relationship of these ten values is circular (i.e., like a pie) with each value being associated with, but independent of, each value on either side. The purpose of this circular structure is to represent the motivational continuum and dynamic nature of values: similar motivations apply to similar values, which can come in to conflict with values that are oppositely motivated (i.e., opposite side of the circular continuum) (Schwartz et al., 2001). The example that Schwartz et al. (2001) uses is "the pursuit of

Table 1

Definitions of 10 value constructs with goals and item example

Value Construct	*Definition*	*Example*
Power	Social status and prestige, control or dominance over people and resources.	He or she likes to be in charge and tell others what to do. He or she wants people to do what he or she says.
Achievement	Personal success through demonstrating competence according to social standards.	Being very successful is important to him or her. He or she likes to stand out and to impress other people.
Hedonism	Pleasure and sensuous gratification for oneself.	He or she really wants to enjoy life. Having a good time is very important to him or her.
Stimulation	Excitement, novelty, and challenge in life.	He or she looks for adventures and likes to take risks. He or she wants to have an exciting life.

(table continues)

Value Construct	*Definition*	*Example*
Self-direction	Independent thought and action-choosing, creating, exploring.	He or she thinks it's important to be interested in things. He or she is curious and tries to understand everything.
Universalism	Understanding, appreciation, tolerance and protection for the welfare of all people and for nature.	He or she thinks it is important that every person in the world should be treated equally. He or she wants justice for everybody, even for people he or she doesn't know.
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.	He or she always wants to help the people who are close to him or her. It's very important to him or her to care for the people he or she knows and likes.

(table continues)

Value Construct	*Definition*	*Example*
Tradition	Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide the self.	He or she thinks it is important to do things the way he or she learned from his or her family. He or she wants to follow their customs and traditions.
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.	He or she believes that people should do what they're told. He or she thinks people should follow rules at all times, even when no one is watching.
Security	Safety, harmony and stability of society, of relationships, and of self.	The safety of his or her country is very important to him or her. He or she wants his or her country to be safe from its enemies.

Note: From Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001) Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. Journal of Cross-Cultural Psychology, 32, p. 521.

novelty and change (stimulation values) is likely to undermine preservation of time-honoured customs (tradition values). In contrast, the pursuit of tradition values is congruent with the pursuit of conformity values: both motivate actions of submission to external expectations" (p. 521). Therefore, the closer in the continuum two values are, the more likely that they will share similar motivations and, conversely, the further apart two values are, the more antagonistic the underlying motivations (Schwartz et al., 2001). It is through this arrangement of values that people and cultures structure their values systems.

Through a substantial number of studies using Schwartz's value theory, 93% of samples in 63 countries supported the distinctiveness of the ten values and the circular structure of relations among them (Schwartz & Sagiv, 1995). Most commonly, eight of ten values conformed to distinct regions in multidimensional space with two values that are theoretically linked becoming intermixed (Schwartz & Sagiv, 1995). Most of these results, however, have been limited to literate adults due to the abstract nature of values that are not easily articulated as items on the Schwartz Value Survey (Schwartz, 1994). To lower the complexity of survey items, the survey was shortened and items were simplified in wording to be more applicable for less literate sample populations (Portrait Values Questionnaire; Schwartz et al., 2001).

Social Axioms. Social axioms are generalizable social beliefs, or *untested* theories (*axioms*), that are endorsed and used by cultural members to improve functional survival in their sociocultural environment. Specifically, social axioms provide people with information that can be used to guide behaviour for the attainment of goals for protection, for the maintenance of ego-defences or self-worth, for the expression of

an individual's values, and for understanding the world. For example, "there is usually only one way to solve a problem" or "there are phenomena in the world that cannot be explained by science." According to Leung et al. (2002, p. 288), "Social axioms play a central and organizing role in people's belief systems and that their major function is to enhance survival and functioning of people in their social and physical environments." Therefore, at the simplest level, social axioms are perceptions of a causal or correlational relationship between two entities.

Leung and colleagues (2002) used a psychological approach to cultural research by investigating individual beliefs that were functionally important for survival. From a multi-ethnic collection of 4000 potential social axioms, 60 highly representative items were identified and compared across five cultural groups with over 1000 participants in the Germany, Hong Kong, Japan, United States and Venezuela. These studies found substantive consistency in four out of five social axiom factors: Social Cynicism, Social Complexity, Reward for Application, Spirituality and, less consistently, Fate Control (Leung et al., 2002). The Social Cynicism factor represents a negative view of human nature, a biased view against some groups of people, a mistrust of social institutions, and a disregard for ethical means for achieving an end. Social Complexity represents no rigid rules but rather multiple ways of achieving a given outcome and that inconsistency in human behaviour is common. The Reward for Application factor represents a general belief that effort, knowledge and careful planning will lead to positive results. Spirituality represents the existence of supernatural forces and the functions of religious belief. The Fate Control factor represents a belief that life events

are predetermined and that there are some ways for people to influence these outcomes (Leung et al., 2002).

The usefulness of this theory relies on demonstrating that social axioms account for unique variance in behaviours above and beyond the more commonly used and established value theories (Bond, Leung, Au, Tong & Chemonges-Nielson, 2004b). It is well understood that cultural theories about values do not fully explain the influence that culture has on social behaviours (Leung, Bond, & Schwartz, 1995). Values provide a conceptualization of the desired or desirable goals which cultural members pursue, but do not explain how these goals are pursed or achieved. This recognition of the limitation of values research resulted in the development and conceptualization of the social axioms theory (Leung et al., 2002). Social axioms have only been recently been proposed, so this construct lacks the level of confirmation that the values construct have gained as a cultural descriptor at the macro-level and micro-level.

The aim of this cross-cultural research with values has focused on understanding the relationship between culture and behaviour. For example, Morris et al. (1998) found that values of tradition and conformity predicted preference for the avoidant conflict resolution style. O'Connor and Shimizo (2002) found that participants' individualistic or collectivistic values predicted coping styles. Farh, Leong and Law (1998) found vocational choices can be explained with traditional Chinese values. Regardless of these findings, values have been found to be weak to moderate predictors of behaviour (Singelis et al., 2003; Hofstede, 2001), possibly due to the fact that values are abstract concepts that are not easily articulated by participants. In order to improve the

prediction of social behaviours, Bond et al. (2004b) examined these same social behaviours listed above using both values and social axioms.

Bond and colleagues (2004b) surveyed 180 undergraduate students in Hong Kong using the Schwartz Values survey, the Social Axioms survey (Leung et al., 2002), and three established behavioural measures: conflict resolution styles, ways of coping, and vocational interests. This study focused on examining the unique contribution of social axioms above that which is explained by values and the relationship of these cultural constructs to social behaviours. A hierarchical regression found that values and social axioms both accounted for unique variance in each of the behavioural measures with little overlap between values and social axiom constructs (Bond et al., 2004b). All correlational results were consistent with previous findings (Rupf & Boehnke, 2002). For the purposes of this study, the most important result was the ability of social axioms to predict social behaviour. For example, Reward for Application was related to preference for conventional jobs or routine tasks that have a direct effort-reward link. Furthermore, participants who endorsed a Reward for Application orientation also preferred an accommodative approach to resolving conflict. Bond et al. (2004b) hypothesized that these people are high in conservatism and, therefore, are disinclined to become troublesome in order to maintain their Reward for Application. Individuals that were high in Spirituality showed a preference for accommodation and competition in resolving conflict, which is logical considering the fervour that many religious individuals show for their social views. Social Cynicism was negatively related to, and Social Complexity was positively related to, collaboration and compromise styles of conflict resolution. Fate Control was related to distancing style and to wishful thinking, whereas Cynicism was

related to wishful thinking due to negative evaluations of social hierarchical control or social dominance (Bond et al., 2004b; Sidanius, 1993).

While cross-cultural researchers know less about social axioms than values, in the last five years many studies have been conducted that look at both the macro- and micro-level expressions of social axioms. At the culture level, Bond et al. (2004a) focused on exploring national expressions of social axioms that may be useful for examining societal differences. At the individual level, social axioms have been explored in relation to acculturation (Kurman & Ronen-Eilon, 2004; Safdar et al., 2003) and to culturally-related social behaviour (Bond et al., 2004b). These studies provide preliminary results that suggest the relevance of social axioms in cultural research.

Looking at acculturation, Safdar and colleague's (2006) study found that the expression of social axioms was influenced by the host culture in the acculturation process. Similar to previous values research, these researchers operationalized acculturation as intercultural contact with a host culture, leading to a shift in social axiom expressions away from an Iranian normative sample and towards a Canadian normative sample. This was achieved by comparing the expression of social axioms of 150 Iranian immigrants to Canada with 149 Canadians and 146 Iranians in the country of origin (Safdar et al., 2006). The results of this study demonstrate the effect of acculturation on the expression of social axioms. The Iranian immigrants to Canada appeared to have shifted their expression of social axioms away from the Iranian normative sample and towards the Canadian normative sample. Safdar et al. (2006) also suggest that it is possible that there is a self-selection bias: people that migrate may hold social beliefs, that is, values and axioms, which are more closely related to Canadian beliefs than

those held by typical Iranians. Additional research would need to be completed to confirm these results.

This study provides the basis for a continued examination of social axiom's ability to explain culture and social behaviour. Furthermore, as demonstrated previously, the use of social axioms in conjunction with values should be able to provide an improved understanding of social behaviour and be related to acculturation through their function as cultural guides. This premise was examined by Kurman and Ronen-Eilon (2004) who explored the role of social axioms, in comparison with values, in moderating social and functional difficulties to a new host culture. These researchers' primary purpose was to explore the relationship of these two types of cultural knowledge with sociocultural adaptation to demonstrate the validity of the social axioms as behavioural guides.

Values are related to the biological and social needs of individuals, and to the functioning and survival of the cultural in-group (Schwartz 1992, 1994). Kurman and Ronen-Eilon (2004) chose to examine a similar relationship between social axioms and cultural functionality by testing the hypothesis that social axioms are more germane to social behaviour than values. To explore this hypothesis, these researchers chose to look at the relationship between accuracy of knowledge of values and social axioms for a host culture and the amount of sociocultural difficulties that were experienced. Sociocultural adaptation is the development of sociocultural specific skills required to negotiate daily situations (e.g., shopping) and different culture-specific aspects of living in the host culture (e.g., different foods) (Searle & Ward, 1990). In addition, functional adaptation was assessed using four items about communicating in Hebrew, attaining suitable employment status, making a living, and feeling comfortable in Israeli society.

The choice of this type of adaptation is particularly useful for this research in that the practical nature of social axioms is expected to be related to social behaviour.

An important purpose of Kurman and Ronen-Eilon's (2004) study was to compare the impact of knowledge of Israeli social axioms with cultural similarity to Israeli social axioms in the adaptation process. This was accomplished by comparing two immigrant samples that were representatives of a culturally distant sample (i.e., Ethiopian) and a culturally similar sample (i.e., Russian). Using these two samples, the researchers were able to explore whether knowledge or cultural similarity of social axioms uniquely explained social and functional adaptation (see Figure 1).

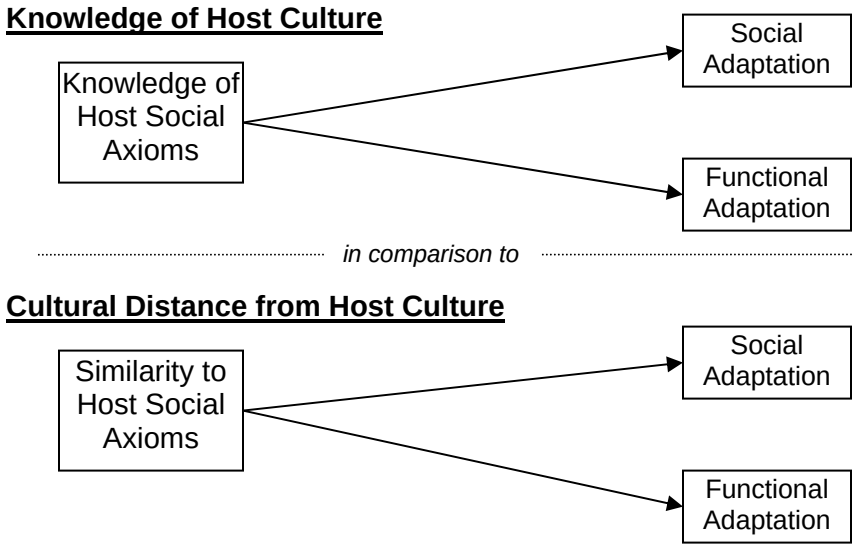
In the hierarchical regression analysis, knowledge of social axioms was the only significant predictor of functional adaptation, accounting for 6% of the variance in the Russian sample and 22% in the Ethiopian sample. Looking at social adaptation, both cultural knowledge and cultural distance accounted for similar amounts of variance, 3% and 9%, respectively, for the Russian sample, and 4% and 5% for the Ethiopian sample (Kurman & Ronen-Eilon, 2004). These results provide support for the importance of social axioms as an element of cultural knowledge that can facilitate behavioural adaptation to a culture. This analysis did not report any effects for knowledge of host culture values or similarity to host culture values, most likely due to the researchers' focus on validating the social axioms construct.

Following this analysis, Kurman and Ronen-Eilon (2004) examined the unique contributions of different types of sociocultural knowledge, values and social axioms, in explaining social and functional adaptation. As expected, knowledge of values only accounted for a moderately significant amount of functional adaptation's variance for the

Russian sample. Values are considered to be related to social behaviour, but only distantly, due to their global and abstract nature. In contrast, social axioms are more directly related to social behaviour because of their role in providing behavioural information for social functioning. As expected, social axioms significantly accounted for

Figure 1

Theoretical model used by Kurman and Ronen-Eilon (2004).



11% and 6% of the unique social adaptation variance and 24% and 4% of functional adaptation for the Ethiopian and Russian samples, respectively. This suggests a strong relationship exists between social axioms and the social and functional adaptation.

The research by Kurman and Ronen-Eilon (2004) demonstrates that knowledge of a culture is related to lower levels of social and functional difficulties. Furthermore, these researchers assert that an individual's knowledge of a host culture was more important than an individual's similarity to the host culture for lowering adaptation difficulties. The implication of this research is that newcomers to a host culture can benefit from learning cultural knowledge in order to improve adaptation to a new host culture. Additional research should examine this finding using a more comprehensive investigation of adaptation, rather than adaptation difficulties, to verify and to better understand the role of cultural knowledge in host culture adaptation.

In order to establish the role of cultural knowledge in facilitating newcomers' adaptation to a new host culture, this research will build upon Kurman and Ronen-Eilon's (2004) research design. An important issue that needs to be addressed is the use of the sociocultural measure of acculturation difficulty. The sociocultural adaptation measure used in this research examines adjustment difficulties that are experienced by newcomers to a host culture (Searle & Ward, 1990). As such, it is indicative of the level of cultural conflict that is experienced by an individual, rather than their ability to adapt to a new culture. As such, this measure does not necessarily explore adaptation to a culture. Potentially, newcomers could have experienced strong difficulties in their original culture as well. Therefore, to extend on the conclusions drawn by Kurman and Ronen-Eilon (2004), additional research would need to explore the psychological and

behavioural adaptation models that are more conducive to assessing cultural competency and coping (Van de Vijer & Phalet, 2004).

Rationale for the Study

The necessity of knowledge of values and social axioms for cultural functionality has been demonstrated with different groups (Leung et al., 2002; Schwartz, 1992, 1994). The theoretical premise for these two types of knowledge relies on their supportive function in assisting cultural members to interact in harmony with other cultural members. When an individual moves to a new culture, it has been documented that there is a necessary shift in the expression of values and social axioms towards the host culture position (Domino & Acosta, 1987; Feldman et al., 1992; Georgas et al., 1996; Safdar et al., 2006). There has been very little empirical exploration of how this shift occurs. Anecdotally, it has been presumed that this knowledge aids newcomers in the process of adaptation and attainment of social opportunities. How this sociocultural knowledge affects adaptation and the strength of this relationship is unclear.

Through the exploration of psychological and behavioural adaptation as affected by the knowledge of values and social axioms for the host culture, this research study has the following two objectives. The first objective is to explore and validate the distinctions in the conceptualizations of values and social axioms and their relationship to behavioural and psychological adaptation to a host culture. For instance, are social axioms linked to behavioural, or functional, adaptation as behavioural guides as seen by Kurman and Ronen-Eilon (2004; Bond et al., 2004b)? Confirming this relationship would increase validity of social axioms as behavioural guides. On the other hand, values are conceptually more distal to social behaviour than social axioms, which makes them

weak predictors of behavioural adaptation. Instead, values are considered to be proximal to self-concepts and self-esteem (Grube et al., 1994; Hofstede, 1984, 2001). The result of this close association between values and self-constructs suggests that changes to values are more likely than social axioms to have a relationship with an individual's sense of well-being, and by association, psychological adaptation.

The second objective of this research is to explore the relationship between cultural knowledge and the well-being and participation of newcomers in a host culture. Kurman and Ronen-Eilon (2004) found that increased knowledge was related to decreased adaptation difficulties, but provided no understanding about how this relationship occurs. Assuming the cultural learning approach to adaptation, it is possible that increased cultural knowledge is related to increased participation in the host culture due to an understanding of that culture, which could lead to increased psychological adaptation. Or, conversely, a newcomer may have an increased sense of psychological well-being based on cultural knowledge of the host, which enables increased participation in the host culture. Both relationships are valid hypotheses which will be explored. Additional exploratory analysis will look at the level of adaptation, behaviourally or psychologically, that occurs when an individual holds congruent or incongruent levels of knowledge about a host culture's values and social axioms.

The importance of examining the role of cultural knowledge (i.e., values and social axioms) in adaptation to a host culture has wide-ranging implications for applied research. This research will extend the understanding of psychological and behavioural adaptation by exploring their relationship with knowledge of the host culture. Furthermore, by establishing that trans-situational cultural knowledge, like values and

social axioms, is an important factor in negotiating a new understanding and adaptation to a host culture, additional research could lead to better training for immigrants and reduce negative psychological effects from poor adjustment or culture shock.

Hypotheses

This study will utilize an adaptation model that is based on Kurman and Ronen-Eilon's (2004) research and others cited in this study (see Figure 2). Within this model are two latent constructs, cultural knowledge and cultural adaptation, that are proposed to be related to each other. Cultural knowledge is represented by knowledge of the host country's values and social axioms, and adaptation is represented by behavioural and psychological adaptation to the host culture.

Following this line of reasoning, the more cultural knowledge that a newcomer has of the host culture, the more likely these individuals will be capable of interacting with the host culture. Therefore, greater cultural knowledge will be positively related to adaptation to the host culture. In order to explore this potential relationship, knowledge of values and social axioms will be compared with psychological and behavioural adaptation to a host culture; however, as discussed earlier, values and social axioms may have a differential relationship with adaptation. Specifically, social axioms are expected to be linked more strongly to behavioural adaptation than psychological adaptation due to their use as behavioural guides. For example, the social axiom "significant achievement requires one to show no concern for the means needed for that achievement" directs an individual about what is appropriate social behaviour in situations where social achievement is an objective. As such, social axioms should account for more variance in behavioural adaptation than values. Conversely, values

are expected to be linked to self-concepts and self-esteem (Grube et al., 1994; Hofstede, 1984, 2001), which may be related to an individual's psychological adaptation. The greater the difference between original and host cultural values, the more strongly an individual will be affected by the change in their own values and any perceived threat to their self-concept.

> Hypothesis: Individuals with more accurate knowledge of Canadian culture will experience more positive adaptation scores. Conversely, individuals with less accurate knowledge of Canadian culture will have less positive adaptation scores.

> > Hypothesis a: Individuals with more accurate knowledge of Canadian social axioms will experience more positive behavioural adaptation scores. Conversely, individuals with less accurate knowledge of Canadian social axioms will have less positive behavioural adaptation scores.

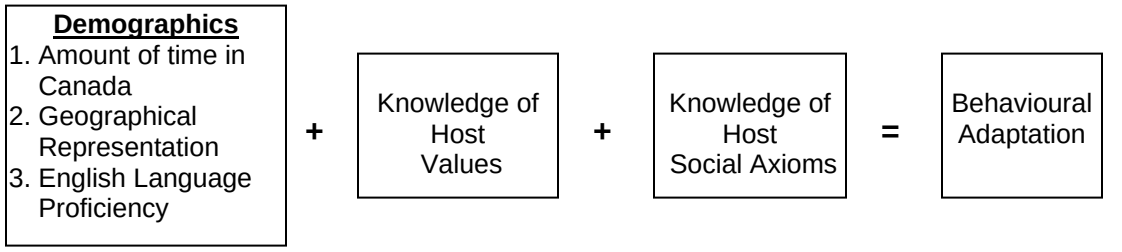
> > Hypothesis b: Individuals with more accurate knowledge of Canadian values will experience more positive psychological adaptation scores. Conversely, individuals with less accurate knowledge of Canadian values will have less positive psychological adaptation scores.

Psychological and behavioural adaptation measures have been utilized to examine many aspects of acculturation, yet there is little understanding about how a newcomer's understanding of the host culture affects his or her adaptation to the host culture (Rudmin, 2003). Since social axioms are more relevant to daily social behaviours than values and are conceptually easier to understand, it could be reasonably presumed that behavioural adaptation may influence psychological adaptation. Therefore, this research will explore the relationships found between cultural knowledge and adaptation, as well as any relationships that may be found between psychological and behavioural adaptation.

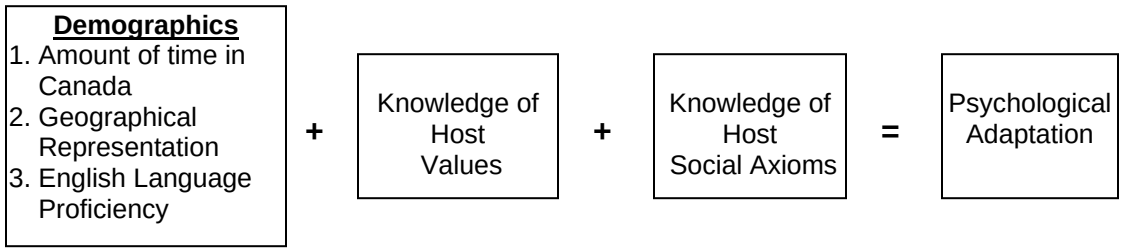
Figure 2

Conceptual model: Demographics, knowledge of Canadian values and social axioms explanation of behavioural and psychological adaptation.

Equation 1.



Equation 2.



Method

Participants: Canadian

Participants for the Canadian sample were recruited from the University of Saskatchewan. This participant group was a normative sample used to assess typical Canadian values and social axioms, and was drawn from the Department of Psychology's undergraduate students. The sample consisted of 150 participants, including 78 (52%) female and 72 (48%) male participants, attending their first year of university. All participants were pre-screened to ensure that they were born and raised in Canada. Furthermore, 138 participants (92%) reported that both parents were Canadian born and raised, while 11 participants (7.3%) indicated that this was not the case and one participant declined to answer. The sample was culturally homogeneous. Student participants in this group were asked to complete an online questionnaire that asked them to report their level of endorsement for a number of value and social axiom question-items.

Procedures: Canadian

The Canadian participants were recruited and informed about the study through the Psychology Department's Participant Pool's website and email promotions. Male and female participants were recruited separately to ensure equal representation. Potential participants were pre-screened, and then directed to the online questionnaire comprised of an information page, consent form, and a 100-question survey. Participants completed the questionnaire in an average time of 15 minutes and were given bonus credits in their introductory psychology class for their participation in this study. Responses were recorded digitally and imported directly into SPSS for analysis.

Responses to items were analyzed and used as a normative standard to be compared with the international and landed immigrant student sample's responses.

Participants: International and Landed Immigrant

The second sample group consisted of international and landed immigrant students attending the University of Saskatchewan. This population was difficult to recruit due to its relatively small size and dispersion across 13 colleges. An extensive and extended recruitment process was conducted over three months with the University of Saskatchewan's International Student office, several International Student Associations, and different community leaders all acting as recruiters. This community's support resulted in a 53% response-rate and the collection of 160 questionnaires.

The international and landed immigrant student sample was pre-screened to ensure that all participants were raised outside of North America. The purpose of this screening process was to increase the likelihood that the majority of participants would have relatively little experience with Canadian or North American culture, which would place these participants in the position of having to learn about their new host culture. In addition, participants were established as being raised primarily in one culture throughout most of their formative years (i.e., approximately up to 13 years of age). This additional step was performed as a cautionary action that would increase interpretability of any findings for adaptation as related to culture and cultural knowledge.

An analysis of the demographic data (see Appendix A) found that this sample group was somewhat balanced in terms of gender and student status. There were 84 (52.5%) female and 76 (47.5%) male participants that ranged in age from 17 to 50 years of age with a mean of 25.9 years (*SD* = 5.74). The amount of time spent in Canada prior

to completing the survey ranged from less than one year to 19 years, with a mean of 3.57 years (*SD*=3.46). All participants were university students, with 65 (40.6%) participants indicating that they were undergraduate students and 91 (56.9%) indicating that they were graduate students.

Further examination of the demographic data found the remaining participant characteristics to be highly heterogeneous. The participants arrived in Canada from over 50 different countries; the largest numbers of participants were from China (n=35, 21.9%), India (n=19, 11.9%), Ghana (n=7, 4.4%), Vietnam (n=6, 3.8%), Indonesia (n=5, 3.1%) and Iran (n=5, 3.1%). Overall, 49 (30.6%) participants were from East Asian countries, 45 (28.1%) were from South Asian countries, 24 (15%) were from Middle Eastern countries, 24 (15%) were from European countries and 18 (11.3%) were from African countries. When asked if they intended to stay in Canada, 98 (61.3%) of the participants indicated that they intended to try and stay, 53 (33.1%) did not intend to stay in Canada, and the remaining 9 (5.6%) indicated that it was possibility, but they currently had no plans to stay. The majority of participants were in Canada using a student visa (n=107, 66.9%), while the rest of the participants were Canadian citizens (n=26, 16.3%), landed immigrants (n=24, 15%), or temporary workers using work-permits (n=3, 1.9%).

These international and landed immigrant student participants had arrived in Canada with a range of educational experience. Sixty-seven (41.9%) students had completed secondary school in their country of origin, 52 (32.5%) students had achieved a bachelor's degree and 39 (24.4%) students had achieved a graduate degree (i.e., Master's) prior to arriving. Furthermore, 99 (61.9%) of the participants had some

amount of English training in their original country. As a result, no participants claimed to have *poor* English proficiency, while 37 (23.2%) claimed to have fair or average levels of English proficiency and 123 (76.9%) claimed to have good or excellent levels of English proficiency.

Procedures: International and Landed Immigrant

The international and landed immigrant student sample was recruited through the International Student Office of the University of Saskatchewan, several International Student Associations, email announcements to college departments, classroom presentations, and community volunteers. Each potential participant was informed about the study and their rights as participants. Furthermore, participants were queried about their ability to read and understand the questionnaire, as it was written in English and many participants had learned English as a second language. All participants that needed or requested assistance with the questionnaire were offered individual assistance at a convenient time and place.

Each participant was given a paper-and-pencil questionnaire that consisted of a cover letter, consent form, raffle form, and a 204-question survey (see Appendices B – I). Although each participant was asked to complete the questionnaire in the presence of the researcher, the vast majority of participants elected to take the questionnaire home and to return the questionnaire to the International Student Office or the Department of Psychology. Participants reported completing the questionnaire in an average time of 30 minutes. Responses were manually coded into SPSS from the questionnaire for analysis.

Two raffle draws for $100 were held as an incentive in the recruitment of participants. Each participant was informed that they had a 1 in 75 chance of winning the draw. All raffle procedures were performed in the Department of Psychology office and all participants were notified, via email, as to whether or not they had won the draw.

Measures

There were two research questionnaires used for the two sample groups. For the Canadian sample, the participants were asked to completed a 100-question online survey that consisted of the Portrait Values Questionnaire (Schwartz et al., 2001) and the Social Axiom Survey (Leung et al., 2002). The international and landed immigrant student sample were asked to completed a 204-question paper-and-pencil survey that contained a revised version of the Portrait Values Questionnaire (Schwartz et al., 2001), a revised Social Axiom Survey (Leung et al., 2002), a Scale of Psychological Well-Being (Ryff & Singer, 1996), a Health Symptom Scale (Lay & Safdar, 2003), a Revised Social Situations Questionnaire (Chapdelaine & Alexitch, 2004), and demographic questions. The revisions to the Portrait Values Questionnaire and the Social Axiom Survey involved a change from first-person references in each question to third-person references that accessed general perceptions about Canadian values or social axioms (as per Kurman & Ronen-Eilon, 2004).

Portrait Values Questionnaire (PVQ). The Portrait Values Questionnaire (see Appendix C) is a shortened version of the Schwartz Values Survey (Schwartz et al., 2001). The PVQ has been validated through moderately strong correlations with the Schwartz Values Survey (range between .51 and .76; Schwartz et al., 2001). The PVQ contains 40 items that measure the ten value types that were identified in the Schwartz

Values Survey (Schwartz, 1994): Benevolence, Universalism, Self-direction, Stimulation, Hedonism, Achievement, Power, Security, Conformity and Tradition. These ten values are combined into two bi-dimensional values, Openness to Change-Conservation and Self-transcendence-Enhancement. Each item is rated using a 6-point Likert scale: (1) very much like me, (2) like me, (3) somewhat like me, (4) a little like me, (5) not like me, and (6) not like me at all. There are two parts to each question item: a description of something important for a hypothetical person and an example (e.g., He likes to take risks. He is always looking for adventures.) Test-retest reliabilities of the scales ranged between .77 and .94 across a 1-month interval, and between .58 and .66 across a 2-year interval. Internal consistencies ranged between .49 and .77 (Schwartz, 2003). Cronbach's alpha coefficients for the ten value types on the PVQ ranged from .37 to .79 (all higher than .50, except for Tradition at .37 and Conformity at .48). These PVQ reliabilities are similar to the Schwartz Values Survey, which ranged from .45 to .76 (Schwartz, 1994).

A reliability analysis of the Canadian sample's PVQ found good reliability for the two bi-dimensional values of Openness to Change – Conservation (*Cronbach's alpha* = 0.72) and Self-Transcendence – Enhancement (*Cronbach's alpha* = 0.74). For the international and landed immigrant student sample, the revised PVQ question-items had high reliability for Openness to Change – Conservation (*Cronbach's alpha* = 0.79) and for Self-Transcendence – Enhancement (*Cronbach's alpha* = 0.81).

Social Axioms Survey (SAS). The Social Axiom Survey (see Appendix D) has 60 items that measure five or six social axiom factors: Social Cynicism, Reward for Application, Spirituality, Fate Control, Social Complexity, and Interpersonal Harmony

(Kurman & Ronen-Eilon, 2004; Leung et al., 2002). Each item is rated on a 5-point Likert scale: (1) strongly believe, (2) believe, (3) no opinion to disbelieve, (4) disbelieve and (5) strongly disbelieve. Confirmatory factor analysis with several cultural groups with the five-factor model had goodness-of-fit indexes ranging from .88 and .95 (Leung et al., 2002). Kurman and Ronen-Eilon (2004) found three of five factors conformed to the original factors (Spirituality and Fate Control as one factor, Social Cynicism, and Interpersonal Harmony). These researchers found alpha coefficients for the Israeli, Former Soviet Union immigrant and Ethiopian immigrant samples, respectively, at .88, .83. and .82 for Spirituality; .76, .65 and .76 for Social Cynicism; .65, .67 and .69 for Interpersonal Harmony; .69, .66 and .75 for Reward for Application; but Social Complexity had poor item loadings, which were not reported.

Similar to previous research (Safdar et al., 2003; Kurman & Ronen-Eilon, 2004), the SAS in this study did not replicate the original five-factor solution that was found in Leung and colleagues (2002) study. This study found a six-factor model of social axioms that replicated the five original social axiom factors with one factor split into two similar but distinct factors (explained below). The reliability for these factors was moderate to high for the Canadian sample with Cronbach's alphas of 0.86 for Spiritual Well-being, 0.73 for Fate Control, 0.74 for Spiritual Complexity, 0.73 for Social Cynicism, 0.69 for Social Complexity, and 0.62 for Reward for Application. The international and landed immigrant student participants' revised version of the SAS had moderate Cronbach's alpha coefficients: Spiritual Well-being at 0.85, Fate Control at 0.65, Spiritual Complexity at 0.49, Social Cynicism at 0.67, Social Complexity at 0.50, and Reward for Application at 0.59.

Psychological Adaptation. Psychological adaptation was measured utilizing two scales: the Scale of Psychological Well-Being (PWB) (see Appendix E; Ryff & Singer, 1996) and the Health Symptom Scale (HSS) (Appendix F; Lay & Safdar, 2003). In related research, Lay and Safdar (2003) utilized the PWB to measure psychological adaptation using six features of well-being: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff & Singer, 1996). The short form of this questionnaire has three items for each subscale for a total of 18 items. Each item is rated using a 6-point Likert scale: (1) Strongly Disagree, (2) Moderately Disagree, (3) Slightly Disagree, (4) Slightly Agree, (5) Moderately Agree, and (6) Strongly Agree. Lay and Safdar (2003) report Cronbach's alpha for the subscales ranging from .83 to .91. This study was interested in the overall psychological well-being of the international and landed immigrant student participants. As such, all PWB-items were used to create an overall mean PWB score. The reliability for this measure was moderately high with a Cronbach's alpha of 0.74.

Due to the potential for some cultures, e.g., Eastern cultures, to somatise psychological and emotional symptoms, a questionnaire was used to record the frequency of any physical distress (Lay & Safdar, 2003). The 18-item HSS includes a number of symptomatic health issues that may indicate difficulties in psychologically adapting to a host culture. Individuals with higher frequencies of symptoms are more likely to be experiencing poor psychological adaptation; therefore, a negative correlation is expected between PWB and HSS. Each item is rated using a 4-point Likert scale: (1) Not at All, (2) A Little Bit, (3) Quite a Bit, and (4) Extremely. Participants were asked to

rate the level of frequency that each symptom had been encountered over the previous month. The Cronbach's alpha for this scale was 0.81.

Behavioural Adaptation. Behavioural adaptation to the host culture, Canada, was examined through a measure of the level of difficulty that newcomers have with social situations using the Revised Social Situations Questionnaire (RSSQ) (Appendix G; Chapdelaine & Alexitch, 2004; Chapdelaine, 1998). This scale was developed at the University of Saskatchewan using the local international students population, which made this scale the most appropriate measure of behavioural adaptation. The RSSQ is comprised of two subscales that are used to measure the degree of difficulty in social situations that a participant has experienced in the new host culture and his or her country of origin. Developed from the cultural learning model of acculturation (Furnham & Bochner, 1982), this 35-item scale asks participants to indicate the level of difficulty that they have experienced in common social situations in the host country and in their country of origin. Each item is rated using a 7-point Likert scale: (1) No Difficulties at All, (4) Medium Difficulty, and (7) Great Difficulty. Difficulty with behavioural adaptation was operationalized as a greater degree of difficulty in social situations in the host culture than the participant's country of origin. As such, a residual change score is used (Posavac & Carey, 1997), where higher scores indicate a greater degree of social situation difficulty in the host culture.

Chapdelaine (1998) found good construct reliability with this scale and reported high Cronbach's alphas for Social Difficulty in Canada at 0.91 and for Social Difficulty in the Country of Origin at 0.89. The intercorrelation between the subscales was .48, suggesting these scales are related but independent (e.g., susceptible to individual

differences in adaptation to the host culture) (Chapdelaine, 1998). Similar to these initial findings, the RSSQ in this study had high reliability with Cronbach's alphas for Social Difficulty in Canada at 0.91 and for Social Difficulty in the Country of Origin at 0.89.

Demographic Questions. The normative sample participants were asked two screening demographic questions: 1) were you raised in Canada?, and 2) were both of your parents born and raised in Canada? These questions ensured that a homogenous cultural sample was surveyed and that the responses for Canadian values and social axioms would be adequate as a normative sample. The demographic questions for international students (see Appendix I) consisted of 14 open-ended and close-ended questions. Information was gathered about the participants' sex, age, original country, religion, English proficiency, previous education, length of stay in Canada, immigration status and motivation to stay in Canada. It was expected that these items would reflect key characteristics of the international and landed immigrant student participant sample that could be used to determine if this sample was stratified; i.e., different subgroups existed within the larger sample (e.g., undergraduate vs. graduate students) that may have had an effect on the data analyses. In addition, certain demographic variables (e.g., geographical representation, English proficiency, the amount of time spent in Canada) were included due to their possible predictive quality in explaining and accounting for variance in the acquisition of host culture knowledge and the adaptation process.

Data Analysis

1. A preliminary analysis of missing data was conducted for both the Canadian and the international and landed immigrant student samples. For the Canadian sample, a

review of the three participants with four or more data points missing found that the missing data was related to specific social axiom items involving religion or spirituality. These participants were removed, leaving a total of 147 participants for data analysis. For the international and landed immigrant student sample, there were six participants that were removed for missing seven (17.5%) to 11 (27.5%) items on the PVQ and 20 (33.3%) to 56 (93.3%) items on the SAS. This reduced the sample size to 154 participants. All remaining missing data points for both samples were recoded using mean-substitution.

2. The demographic variables were examined to determine which variables should be included as covariates in hierarchical regression analysis. Specifically, using correlations, ANOVAs, and regressions tests, the demographic variables were examined in relation to the dependent variables (i.e., psychological and behavioural adaptation) and the independent variables (i.e., values and social axioms).

3. The responses for the Canadian sample on the PVQ and SAS items were scored to create a normative sample mean and standardization for comparison with the international and landed immigrant student sample. For the PVQ, two bi-dimensional values were computed from the 40 PVQ-items using Schwartz's scoring key using a corrective procedure for individual and cultural group differences in the use of response scales. The mean average of participants' scores on all scale items is subtracted from each value-score to create centred, or difference, scores (Schwartz, Verkasalo, Antonovsky & Sagiv, 1997; Smith, 2004). These centred scores were

used to create a Canadian normative mean for the two bi-dimensional values. For the SAS, principal component analysis was used to determine the appropriate factor solution and extraction method. Factor analysis was used to confirm factor loadings of items on the factor solution in comparison with Leung et al.'s (2002) solution.

4. The dependent variables were scored for use in hierarchical regression analysis. For the PWB, several items were reverse coded and a mean score was created for each participant as an overall indicator of psychological well-being. For the HSS, each item measures frequency of occurrence for a specific health issue and as such, a cumulative overall score of health issues was calculated. Lastly, for the RSSQ, only items that had been experienced in Canada were used. This procedure prevents the unintended effect of lessening of the mean difficulty score when a situation was not experienced in Canada (Chapdelaine & Alexitch, 2004). As an example, if a participant rated a situation as a 4 (medium difficulty) in his or her original country and 0 (never experienced) in Canada, then the difference score would be -4, which is not reflective of difficulty in Canada. Overall, mean differences between the level of difficulty in social situations in the country of origin and in Canada were calculated.

5. The international and landed immigrant student sample's scores on the PVQ and SAS were calculated using the same procedures and factor solutions as the Canadian sample. The accuracy of Canadian values and social axioms was calculated for the international and landed immigrant student sample by subtracting

the Canadian sample's mean for the corresponding scale and dividing this by the appropriate standard deviation to make a z-score for each bi-dimensional value and social axiom factor. The absolute z-score will be indicative of the accuracy of each participant's knowledge of Canadian values and social axioms.

6. A hierarchical regression was used to analyze the unique contribution of knowledge of Canadian values and social axioms in predicting behavioural and psychological adaptation for international and landed immigrant student participants. In the regression equation looking at behavioural adaptation, the first step contained demographic variables (e.g., Geographical Representation, Time in Canada, and English proficiency), the second step contained international and landed immigrant students' accuracy of Canadian value scores, and the third step contained international and landed immigrant students' accuracy of Canada social axiom scores.

Results

Preliminary Analyses

Values and Social Axioms. Responses from the Canadian sample on the PVQ and SAS were used to create the Canadian values and social axioms normative variables that were used for comparison with the international and landed immigrant student sample. The two bi-dimensional values (i.e., Openness to Change – Conservation, Self-Transcendence – Enhancement) were computed from the 40 PVQ-items using Schwartz's scoring key. The individual and cultural group differences found in the response scales were reduced by centring the Canadian participants' scores (Schwartz et al., 1997; Smith, 2004). With the centred scores, a Canadian normative mean was created for the two value types (see Table 2). Both values had low kurtosis (-0.12 and 0.29) and skewness (0.31 and -0.20) for Openness to Change – Conservation and Self-Transcendence – Enhancement, respectively. The mean and standard deviation for each value was used to determine the level of accuracy that the international and landed immigrant student participants had for estimating Canadian values.

Table 2

Values means, standard deviations and reliabilities for the Canadian sample (n= 147)

Values	Mean	Standard Deviation	Cronbach's Alpha
Openness to Change - Conservation	0.15	0.21	0.72
Self-Transcendence - Enhancement	-0.13	0.25	0.74

A preliminary examination of the Social Axioms scale (SAS) involved a principal component analysis. An assessment of the screeplot of eigenvalues found that three factor solutions were possible: 5-factor (the recommended solution by Leung et al., 2002), 6- and 7-factor solutions. Review of the factor correlation matrices found no correlations greater than r= 0.21. The 5-, 6- and 7-factor solutions accounted for 26.88%, 29.74% and 32.27% of the variance, respectively. Examining the rotated factor matrices found that the 6- and 7-factor solutions had almost identical item-loading patterns; the seventh factor consisted of only one significant loaded item. A comparison of the 5- and 6-factor solutions in this study with Leung et al.'s (2002) solution found that the 6-factor solution was the most similar to the original recommended solution, and was used in the examination of the international and landed immigrant student sample (see Appendix J). Interpretation of the six factors was grounded in Leung and colleagues' (2002) research due to the similarity in the loading patterns of four of the six factors: Fate Control, Social Cynicism, Social Complexity and Reward for Application. The remaining two factors appeared to be Leung and colleagues' Spirituality factor split into two unique factors. Spiritual Well-being had items that refer to a spiritual sense of well-being that was based on mental health, the meaning of life and morals. Spiritual Complexity had items that refer to less explainable phenomena, such as a supreme being, ghosts and the relationship between science and religion.

The mean scores, standard deviations and reliabilities for the social axioms are found in Table 3. Kurtosis and skewness was low for five of the six social axioms, ranging from -0.65 to 0.68 and -0.36 to 0.34, respectively. Social Complexity was the only factor with a high level of kurtosis at 2.63, while skewness was acceptable at 0.75.

A high level of kurtosis can be an issue; however, Tabachnick and Fidell (2001) state that the underestimates of variance caused by kurtosis are negligible when using samples larger than 100 or 200 participants. Similar to the values scales, the mean and standard deviation scores for these social axioms were used to examine the level of knowledge international and landed immigrant student participants had for Canadian social axioms.

Table 3

Social axioms means, standard deviations and reliabilities for the Canadian sample (n= 147)

Social Axioms	Mean	Standard Deviation	Cronbach's Alpha
Spiritual Well-being	3.15	0.93	0.86
Fate Control	3.36	0.53	0.73
Spiritual Complexity	2.83	0.61	0.74
Social Cynicism	3.17	0.51	0.73
Social Complexity	1.81	0.38	0.69
Reward for Application	2.24	0.49	0.62

The accuracy of knowledge for Canadian values and social axioms possessed by the international and landed immigrant student participants was calculated as follows: (1) value and social axiom factor scores were computed using the same items and procedures as those used for the Canadian sample; (2) the Canadian sample mean for

values and social axioms was subtracted from each international and landed immigrant student participant's score on the appropriate scale; and (3) this number was divided by the Canadian standard deviation for the same scale (based on Kurman & Ronen-Eilon, 2004). The final score from these procedures represents the level of accuracy that each international and landed immigrant student participant has for Canadian values and social axioms. For example, a score of 0.80 is a less accurate estimate of a value or social axiom than a score of 0.15.

An examination of the results generated by the international and landed immigrant student sample found excellent reliability for the estimates of Canadian values (see Table 4). Kurtosis was low for Openness to Change – Conservation (0.37) and for Self-Transcendence – Enhancement (0.06); low scores were also found for skewness at 0.18 and -0.07, respectively. There was a great deal of disagreement in the participants' estimates of Canadian values, with an underestimate of Openness to Change – Conservation and an overestimate for Self-Transcendence – Enhancement. The amount of variation for each estimate was moderately large, as evidenced by standard deviations at *SD*= 0.88 and 0.92, respectively. This was not unexpected, as these results indicate that the international and landed immigrant student participants appeared to have some difficulty estimating Canadian values. The large amount of variance is most likely the cumulative result of cultural distance and personal factors.

An examination of the international and landed immigrant students' estimates of Canadian social axioms found some variability in the reliability of the items that comprised the social axiom factors (see Table 5). As well, there was a large amount of variability in the mean differences for the social axiom factors; five of the six factors

ranged from *M*= -0.53 to -0.12 and had standard deviations that ranged from *SD*= 0.65 to 1.01. Social Complexity was the only factor with a large and positive mean difference of *M*= 1.07 (*SD*= 1.11), indicating an overestimation of this axiom. There were no issues with skewness (ranging from -0.02 to 0.39), and the kurtosis for four factors was acceptable, ranging from -0.17 to 0.59. The Spiritual Complexity axiom (*kurtosis*= 1.61) and Social Complexity axiom (*kurtosis*= 1.17) had distributions that were peaked with limited range. Again, violations of kurtosis are negligible when using large sample sizes. After considering the implications of the kurtosis and other influencing factors (explained below), Social Complexity was maintained, while Spiritual Complexity was removed from further analyses. Similar to the estimates of values, there were discrepancies in the estimates of Canadian social axioms. As such, the international and landed immigrant student participants appeared to be more likely to *underestimate* the Canadian endorsement of social axioms. Social Complexity was the only factor that was *overestimated*.

Table 4

Values means, mean differences, standard deviations and reliabilities for the international and landed immigrant student sample (n= 154)

Values	Mean	Standard Deviation	Mean Difference	Standard Deviation	Cronbach's Alpha
Openness to Change - Conservation	0.01	0.18	-0.69	0.88	0.79
Self-Transcendence - Enhancement	0.08	0.23	0.82	0.92	0.81

Table 5

Social axiom means, mean differences, standard deviations and reliabilities for the international and landed immigrant student sample (n= 154)

Social Axioms	Mean	Standard Deviation	Mean Difference	Standard Deviation	Cronbach's Alpha
Spiritual Well-being	2.76	0.76	-0.42	0.82	0.85
Fate Control	3.27	0.46	-0.53	0.87	0.65
Spiritual Complexity	2.70	0.39	-0.22	0.65	0.49
Social Cynicism	3.11	0.51	-0.12	1.01	0.67
Social Complexity	2.22	0.42	1.07	1.11	0.50
Reward for Application	2.13	0.42	-0.22	0.87	0.59

Adaptation Measures. A preliminary analysis was conducted on the three dependent variables: Psychological Well-being (PWB), Health Symptoms (HSS) and Social Situations (RSSQ). For the PWB scale, the overall psychological well-being was calculated from all items on the scale and the overall mean for the international and landed immigrant student participants was *M*= 4.77 (*SD*= 0.55). Scores on the 6-point Likert scale ranged from 2.78 to 5.89, which indicate that participants were experiencing positive psychological well-being. The HSS measures how frequently participants experience 18 health-related symptoms. The participants' scores ranged from 18 to 48, out of a possible score of 72, and had a mean of 27.48 (*SD*= 6.23). These results indicate that most participants were experiencing relatively few health problems, which is an indication of good physical health. When PWB and HSS were examined in comparison with each other, there was a moderate negative correlation of *r*= -0.32 (*p*<

0.001). This confirms that these two dependent variables are appropriately measuring aspects of adaptation. Based on previous research (e.g., Lay & Safdar, 2003; Shweder & Sullivan, 1993), an increase in the frequency of health symptoms has been linked to poorer psychological well-being. As such, this finding suggests that participants who had higher reports of psychological well-being were more likely to report fewer health issues.

The RSSQ is a measure of behavioural adaptation and, as such, this study expected to find increased levels of difficulty in host country social situations compared to the country of origin (Chapdelaine & Alexitch, 2004). An examination of this scale was conducted using a paired t-test on the participants' overall mean scores of social difficulty in Canada (M= 2.61, SD= 0.92) in comparison with their country of origin (M= 2.04, SD= 0.81). The t-test results were significant (t(154)= 7.15, p< 0.001), which suggests that participants did experience more difficulty in social situations in Canada. The implication of this increased difficulty is that the international and landed immigrant student participants would have to cope with and adapt to living in Canada.

Additional adjustments were made to the RSSQ scores to improve interpretation of the scale results. The RSSQ scores were screened to ensure that participants had experienced a particular social situation in *both countries* or in *Canada*. Maintaining scores for social situations that were only experienced in a participant's country of origin would erroneously affect the RSSQ scale by reducing the level of difficulty experienced in the host country, which is not true. The result is a scale measure where participants with positive difference scores experienced more difficulty in Canadian social situations than in similar social situations in their country of origin. Conversely, participants with

negative scores experienced more difficulty in social situations in their country of origin than in Canada. As such, the participants' overall level of difficulty in social situations ranged from *M*= -2.81 to 3.94 with an overall mean of 0.64 (*SD*= 1.10). This indicates that the RSSQ is measuring social situations difficulty, as the majority of participants did have positive scores (n= 119). It is difficult to explain why some participants experienced less trouble in social situations in Canada; an examination of results found no data pattern that would explain this phenomenon. Some participants may have had more freedom from past constraints (e.g., family or peer influences) or more support for experiences they encountered in Canada. Regardless, most participants did experience a greater level of difficulty in social situations in Canada than in their country of origin.

Examination of Demographic Variables. Using univariate statistics (i.e., ANOVA, regression, t-test; see Table 6), an analysis was conducted on the demographic variables to assess their relationship with the estimates of Canadian values and social axioms, and with the adaptation measures. Six demographic variables were identified that reflected important differences in participant characteristics that may have had a relationship with cultural learning or adaption to Canada: Age (in years), Geographical Representation (i.e., European, Middle Eastern, African, South Asian, East Asian), English Proficiency (i.e., Fair, Average, Good, Excellent), Student Status (i.e., Undergraduate, Graduate), Intention to Stay in Canada (i.e., Yes, No), and Time in Canada (in years). There were no significant differences in values, social axioms and adaptation when examined on the basis of Age, Student Status and Intention to Stay in Canada. As such, these three demographic variables were dropped from further analyses, while the remaining three variables were considered as covariates for the

Table 6

Univariate analysis examining demographic variables with independent and dependent variables

Variables		PWB	HSS	RSSQ	Openness to Change – Conserv.	Self-Transcend – Enhance.	Spiritual Well-being	Fate Control	Social Cynicism	Social Complexity	Reward for Application
						Continuous variable regression analysis					
Age	R^2	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00
	F	0.04	0.03	2.35	0.10	0.05	0.37	1.97	2.20	0.14	0.01
Time in Canada	R^2	0.00	0.00	0.00	0.01	0.01	0.00	0.03	0.01	0.04	0.01
	F	0.49	0.28	0.15	2.10	0.81	0.47	4.08*	1.36	6.30*	1.95
						Categorical variable analysis of variance					
Geographical Representation	*df*	4	4	4	4	4	4	4	4	4	4
	F	2.78*	0.29	1.34	2.26*	2.62*	0.27	1.78	2.93*	0.91	1.11
English Proficiency	*df*	2	2	2	2	2	2	2	2	2	2
	F	0.00	0.56	1.75	2.30	3.99*	0.47	0.00	0.56	0.71	0.35
Student Status	*df*	2	2	2	2	2	2	2	2	2	2
	F	1.50	1.21	0.07	1.12	1.64	1.13	0.90	1.05	1.10	0.39
Intention to Stay in Canada	*df*	1	1	1	1	1	1	1	1	1	1
	F	0.06	1.01	1.17	0.16	2.67	0.16	0.16	0.96	0.10	0.20

*** p< 0.01 and *p< 0.05 (2-tailed).*

[a] *marginal significance at p=0.065.*

hypothesis testing.

Geographical Representation produced statistically significant differences in Psychological Well-being ($F(4,149)= 2.78$, $p= 0.029$). Using Tukey's HSD test, European participants had a mean of 5.06 ($SD= 0.46$), which was significantly higher than Africans with a mean of 4.55 ($SD= 0.63$) and East Asians with a mean of 4.68 ($SD= 0.59$). Similar main effects were found for two independent variables. For Self-Transcendence – Enhancement ($F(4,149)= 2.62$, $p= 0.037$), the African participants had a mean of 1.37 ($SD= 0.73$), which was a significantly higher overestimate than the South Asians' estimate ($M= 0.59$, $SD= 0.86$). For Social Complexity ($F(4,149)= 2.93$, $p= 0.023$), European participants made higher overestimates ($M= 0.43$, $SD= 1.18$) than the East Asians, who made underestimates ($M= -0.41$, $SD= 0.81$).

English Proficiency was examined to determine if it could be used as a continuous or categorical variable. The international and landed immigrant student participants' responses were primarily found in the Average, Good and Excellent categories, with no participants choosing the Poor category. The limited dimensionality of this variable and the poor qualitative differences between Good and Average precludes this question from being used as a continuous variable. As a categorical variable, English Proficiency produced significant differences in the value Self-Transcendence – Enhancement ($F(2,141)= 3.99$, $p= 0.021$). Participants who reported Average levels of English Proficiency made less accurate estimates ($M= 1.24$, $SD= 0.94$) of this value than those participants with Good proficiency in English ($M= 0.68$, $SD= 0.87$). This result indicates that the participants with lower levels of English proficiency were less capable of understanding Canadians' endorsement of this value.

Lastly, Time in Canada explained variance in two social axiom factors, Fate Control (R^2= 0.03, F(1,151)= 4.08, p= 0.045) and Social Complexity (R^2= 0.04, F(1,151)= 6.30, p= 0.013). Additional post-hoc analyses examined how the amount of time in Canada affected estimates of social axioms. By looking at new arrivals (i.e., less than a year), short-term residents (i.e., two to five years), and long-term residents (i.e., longer than five years), the results indicated that participants who were in Canada longer than five years (M= 0.76, SD= 1.02) were more accurate at estimating Social Complexity than participants in Canada for less than a year (M= 1.43, SD= 1.16). Similar post-hoc analysis did not find significant results for Fate Control.

The results from the demographic analysis suggest the inclusion of these three demographic variables as covariates in the hierarchical regression analyses. As such, Geographical Representation and English Proficiency were recoded into k-1 categorical dummy variables, where k represents the number of categories in the categorical variable. Geographical Representation was recoded into four dummy variables representing Africans vs. non-Africans, Middle Easterners vs. non-Middle Easterners, South Asians vs. non-South Asians, and East Asians vs. non-East Asians. Europeans were the reference group (the group that is represented when all dummy variables are equal to zero). English Proficiency was recoded into three dummy variables representing Fair vs. non-Fair proficiency, Average vs. non-Average proficiency, and Good vs. non-Good proficiency. Excellent English proficiency is the reference group. Time in Canada is a continuous variable and was entered without modification.

Correlational Analyses. Good multiple regression results are dependent upon shared variance between the independent variables and the dependent variables, but

the statistical ability to identify these relationships can be minimized when the shared variance between independent variables is portioned out of the analysis (Tabachnick & Fidell, 2001). An evaluation of the ability of this analysis to find significance found that there were only two significant correlations between the independent and dependent variables (see Table 7). Reward for Application correlated significantly with PWB at r= -0.17 (p< 0.05) and with RSSQ at r= 0.21 (p< 0.01). This would indicate that international and landed immigrant students had greater psychological well-being when they underestimated the need of Canadians to be rewarded for personal effort. Furthermore, participants who experienced greater levels of difficulty participating in Canadian society tended to overestimate the importance Canadians place on a need to be rewarded for personal effort. As such, there appears to be a limited amount of shared variance between the independent and dependent variables, which will limit the statistical ability of the multiple regression analysis to detect a relationship between estimates of Canadian values and social axioms, and the two types of adaptation.

An examination of the intercorrelations of values and social axioms suggested that a variable should be removed. Due to the inherent circular relationship and structure of values, most of the values share variance with at least two other values. The use of composite values (e.g., combining values theoretically; Schwartz, 1994) attenuates issues of multicolinearity, but Schwartz et al. (1997) also suggest the removal of additional values from analysis. Hedonism, which is a component of both bi-dimensional values, was removed from the Openness to Change – Conservation value to reduce shared variance. A strong negative correlation between the two bi-dimensional values still remains, r= -0.79 (p< 0.01). Similarly, the six social axiom factors had multiple

Table 7

Pearson correlational matrix for independent and dependent variables

Independent/ dependent variables	1	2	3	4	5	6	7	8	9	10
1. Openness to Change - Conservation										
2. Self-Transcendence - Enhancement	-0.79**									
3. Spiritual Well-being	0.21**	-0.22**								
4. Fate Control	0.03	0.076	0.18*							
5. Spiritual Complexity	0.24**	-0.32**	0.71**	0.12						
6. Social Cynicism	-0.07	0.25**	-0.07	0.52**	-0.15					
7. Social Complexity	0.06	-0.03	0.12	-0.06	0.14	0.14				
8. Reward for Application	0.02	-0.09	0.27**	-0.03	0.33**	-0.18*	0.36**			
9. PWB	0.13	0.01	-0.06	0.13	-0.11	0.14	-0.10	-0.17*		
10. HSS	-0.09	0.05	0.07	-0.04	0.02	-0.05	-0.00	0.00	-0.32**	
11. RSSQ	-0.09	0.02	-0.07	-0.06	-0.07	-0.11	0.14	0.21**	-0.14	0.02

*** p< 0.01 and *p< 0.05 .*

intercorrelations. To mitigate the overlap in shared variance and similarity in the constructs, Spiritual Complexity was removed from future hypothesis testing due to several strong correlations with other axioms, especially with Spiritual Well-being.

There were only three significant correlations between the remaining values and social axioms. Spiritual Well-being and Social Cynicism had correlations with both values that ranged from r= -0.22 (p< 0.01) to r= 0.25 (p< 0.01). While these correlations are significant, the strength of the relationship is moderate. The shared variance between these two independent variables lowers the unique variance available for regression analysis; however, this relationship is a key element for hypothesis testing, which is examining the uniqueness of values and social axioms in the explanation of psychological and behavioural adaptation.

Test of Hypotheses

To examine how well knowledge of the host culture explains variance in the adjustment to a new host culture, a hierarchical linear regression was computed. Each dependent variable (i.e., Psychological Well-being, Health Symptoms, Social Situation Difficulty) was examined using hierarchical regression to establish if a relationship exists independently for each of the two independent variables (i.e., knowledge of Canadian values and social axioms), while controlling for Geographical Representation, English Proficiency, and Time in Canada. As mentioned previously, two of these demographic variables were dummy coded: Geographical Representation (i.e., Middle Eastern, African, South Asian, East Asian) and English proficiency (i.e., English – Fair, English – Average, English – Good). Each analysis was examined for assumptions of linearity,

normally distributed errors, uncorrelated errors and multivariate outliers, which were all met.

The hierarchical regression analysis computed for Psychological Well-being (PWB) (see Table 8) found that the three demographic variables were non-significant in their accounting of PWB variance (R^2= 0.07, F(8,139)= 1.28, p= 0.26). The only variable that accounted for a significant amount of PWB variance was knowledge of Canadian values, F(15,137)= 1.91, p= 0.048. The international and landed immigrant student participants' knowledge of Canadian values accounted for 5% of their psychological well-being variance, which is not a substantial amount of variance, but it is indicative of a relationship between PWB and knowledge of Canadian values. This relationship was maintained in the hierarchical analysis when the knowledge of social axiom variables were introduced, even though these additional variables did not account for a significant increase in the amount of variance explained. The bi-dimensional values provided significant and moderately large standardized beta coefficients in the final two steps of the regression analysis: Openness to Change – Conservation with β= 0.39 and 0.37, and Self-Transcendence – Enhancement with β= 0.34 and 0.29. As such, knowledge of Canadian values appears to have an important, albeit distant, role in the international and landed immigrant students' psychological well-being.

An additional aspect of this analysis that deserves consideration is geographical representation. The East Asian participants consistently provided significant beta coefficients to each of the five steps of the analysis, ranging from β= 0.22 to 0.24. While the East Asian participants were the largest represented group in this analysis (49 participants), it more likely that cultural distance is related to psychological adaptation.

Future research would need to examine the potential relationship between cultural distance and participants' overall psychological well-being, especially the East Asian participants.

A second hierarchical regression was computed for Health Symptoms (HSS) (see Table 9), which found no relationships between the variables in this analysis and reported health symptoms. Neither the demographic nor the independent variables significantly accounted for any unique variance ($F(15,132)= 0.36$, $p= 0.986$), and the amount of variance that these variables might have explained was insignificant. As such, there were no significant beta coefficients in any of the steps of this regression analysis. These results indicate that knowledge of Canadian values or social axioms is not related to the health symptoms that international and landed immigrant students experienced.

The last hypothesis test involved a regression analysis of Social Situation difficulty in Canada (RSSQ) (see Table 10). This analysis found that there was no significant explanation of the social situation difficulties experienced by the international and landed immigrant student participants, $F(15,132)= 1.40$, $p= 0.158$. There was one significant beta coefficient in this analysis: the Reward for Application axiom produced a standard coefficient of $\beta= 0.21$ ($t= 2.16$, $p= 0.033$). The significance of this coefficient had a positive effect on the final step of the regression analysis by increasing the amount of variance explained from 7% to 14%, which was a marginally significant increase ($t= 2.21$, $p= 0.057$). Despite this trend toward significance, neither the knowledge of Canadian values or the knowledge of Canadian social axioms appear to have a relationship with social situation difficulties in a host culture.

This last regression analysis does not support the finding by Kurman and Ronen-Eilon (2004) that social axioms significantly explained social and functional adaptation. An important difference between these two analyses was that the demographic variables used in this analysis were not used in Kurman and Ronen-Eilon's study. A post-hoc analysis conducted without the demographic variables found that knowledge of Canadian social axioms significantly explained 8.4% of Social Situation difficulty in Canada (RSSQ; see Appendix L), $F(7,147)= 2.11$, $p= 0.047$. The Reward for Application social axiom remained stable with a significant standardized beta coefficient of $\beta= 0.23$ ($t= 2.52$, $p= 0.013$). While there was an increase in significance for social axioms explaining social situation difficulty, the importance of this finding is important as it suggests that the demographic variables are an important contributor in the explanation of social situation difficulty. The Spiritual Well-being social axiom was marginally significant with $\beta= -0.15$ ($t= -1.76$, $p= 0.081$). The implications of this post-hoc finding are discussed below.

Table 8

Hierarchical regression analysis for variables predicting Psychological Well-being (n= 148)

Variables	*B*	*SE B*	β	R^2	ΔR^2
Step 1				0.05	0.05
Constant	4.73	0.07			
Middle Eastern	0.07	0.11	0.06		
African	-0.01	0.15	-0.01		
South Asian	0.08	0.13	0.06		
East Asian	0.33	0.13	0.24**		
Step 2				0.07	0.02
Constant	4.69	0.12			
Middle Eastern	0.07	0.11	0.06		
African	0.00	0.17	0.00		
South Asian	0.09	0.14	0.07		
East Asian	0.34	0.14	0.24*		
English – Fair	-0.14	0.19	-0.07		
English – Average	0.13	0.14	0.10		
English – Good	0.04	0.11	0.04		
Step 3				0.07	0.00
Constant	4.74	0.14			
Middle Eastern	0.06	0.11	0.06		
African	-0.02	0.17	-0.01		
South Asian	0.09	0.14	0.07		
East Asian	0.34	0.14	0.24*		
English – Fair	-0.17	0.20	-0.08		

(Table continues)

Variables	*B*	*SE B*	β	R^2	ΔR^2
English – Average	0.12	0.15	0.08		
English – Good	0.02	0.11	0.02		
Time in Canada	-0.01	0.01	-0.07		
Step 4				0.12*	0.05*
Constant	4.78	0.14			
Middle Eastern	0.05	0.11	0.04		
African	-0.01	0.17	-0.01		
South Asian	0.07	0.14	0.05		
East Asian	0.32	0.14	0.23*		
English – Fair	-0.22	0.20	-0.11		
English – Average	0.07	0.15	0.05		
English – Good	0.00	0.11	0.00		
Time in Canada	-0.01	0.01	-0.05		
Openness to Change – Conservation	0.23	0.08	0.39**		
Self-Transcendence – Enhancement	0.19	0.08	0.34*		
Step 5				0.15	0.03
Constant	4.82	0.16			
Middle Eastern	0.06	0.11	0.06		
African	0.00	0.17	0.00		
South Asian	0.08	0.14	0.06		
East Asian	0.32	0.14	0.22*		
English – Fair	-0.26	0.20	-0.13		
English – Average	0.07	0.15	0.05		
English – Good	0.02	0.11	0.02		

(Table continues)

Variables	*B*	*SE B*	β	R^2	ΔR^2
Time in Canada	-0.01	0.01	-0.07		
Openness to Change – Conservation	0.21	0.08	0.37**		
Self-Transcendence – Enhancement	0.16	0.08	0.29*		
Spiritual Well-being	-0.03	0.05	-0.05		
Fate Control	0.02	0.06	0.03		
Social Cynicism	0.02	0.05	0.03		
Social Complexity	-0.04	0.04	-0.10		
Reward for Application	-0.04	0.06	-0.07		

Note. R^2= *0.15. ; F*(15,132)= 1.53, *p*= 0.104
** *p*< 0.01 and **p*< 0.05.

Table 9

Hierarchical regression analysis for variables predicting Health Symptoms (n= 148)

Variables	*B*	*SE B*	β	R^2	Δ R^2
Step 1				0.01	0.01
Constant	27.62	0.92			
Middle Eastern	-0.85	1.34	-0.06		
African	1.38	1.93	0.07		
South Asian	0.25	1.64	0.01		
East Asian	-0.12	1.64	-0.01		
Step 2				0.02	0.01
Constant	28.51	1.58			
Middle Eastern	-0.79	1.38	-0.06		
African	0.87	2.11	0.04		
South Asian	0.02	1.78	0.00		
East Asian	-0.29	1.77	-0.02		
English – Fair	-1.67	2.47	-0.07		
English – Average	-0.10	1.84	-0.01		
English – Good	-1.31	1.36	-0.11		
Step 3				0.02	0.00
Constant	28.17	1.81			
Middle Eastern	-0.74	1.38	-0.05		
African	0.10	2.14	0.05		
South Asian	0.02	1.78	0.00		
East Asian	-0.26	1.77	-0.02		
English – Fair	-1.47	2.53	-0.06		
English – Average	0.02	1.87	0.00		

(Table continues)

Variables	*B*	*SE B*	β	R^2	ΔR^2
English – Good	-1.21	1.39	-0.10		
Time in Canada	0.06	0.17	0.03		
Step 4				0.02	0.00
Constant	27.95	1.87			
Middle Eastern	-0.69	1.39	-0.05		
African	0.85	2.18	0.04		
South Asian	0.03	1.80	0.00		
East Asian	-0.31	1.80	-0.02		
English – Fair	-1.27	2.56	-0.05		
English – Average	-0.01	1.93	-0.00		
English – Good	-1.14	1.41	-0.09		
Time in Canada	0.06	0.17	0.03		
Openness to Change – Conservation	-0.58	1.03	-0.08		
Self-Transcendence – Enhancement	-0.24	0.99	-0.04		
Step 5				0.04	0.02
Constant	27.81	2.05			
Middle Eastern	-0.42	1.46	-0.03		
African	0.86	2.24	0.04		
South Asian	0.28	1.86	0.02		
East Asian	-0.03	1.89	-0.00		
English – Fair	-0.98	2.62	-0.04		
English – Average	0.04	1.96	0.00		
English – Good	-1.25	1.44	-0.10		
Time in Canada	0.05	0.17	0.02		

(Table continues)

Variables	*B*	*SE B*	β	R^2	ΔR^2
Openness to Change – Conservation	-0.55	1.08	-0.08		
Self-Transcendence – Enhancement	0.07	1.07	0.01		
Spiritual Well-being	0.91	0.72	0.12		
Fate Control	-0.26	0.80	-0.04		
Social Cynicism	-0.29	0.72	-0.05		
Social Complexity	0.03	0.56	0.01		
Reward for Application	-0.08	0.76	-0.01		

Note. R^2= *0.04 ; F*(15,132)= 0.36, *p*= 0.986
** *p*< 0.01 and **p*< 0.05.

Table 10

Hierarchical regression analysis for variables predicting Social Situation Difficulty (n= 148)

Variables	*B*	*SE B*	β	R^2	ΔR^2
Step 1				0.03	.03
Constant	0.73	0.16			
Middle Eastern	0.11	0.23	0.04		
African	-0.11	0.33	-0.03		
South Asian	-0.47	0.28	-0.15		
East Asian	-0.28	0.28	-0.09		
Step 2				0.05	0.02
Constant	0.66	0.27			
Middle Eastern	0.09	0.24	0.04		
African	-0.09	0.37	-0.02		
South Asian	-0.47	0.31	-0.15		
East Asian	-0.28	0.31	-0.09		
English – Fair	-0.37	0.43	-0.08		
English – Average	0.24	0.32	0.08		
English – Good	0.12	0.24	0.06		
Step 3				0.05	0.00
Constant	0.56	0.31			
Middle Eastern	0.10	0.24	0.04		
African	-0.05	0.37	-0.01		
South Asian	-0.47	0.31	-0.15		
East Asian	-0.27	0.31	-0.09		
English – Fair	-0.31	0.44	-0.07		

(Table continues)

Variables	*B*	*SE B*	β	R^2	ΔR^2
English – Average	0.27	0.32	0.09		
English – Good	0.15	0.24	0.07		
Time in Canada	0.02	0.03	0.05		
Step 4				0.07	0.02
Constant	0.49	0.32			
Middle Eastern	0.12	0.24	0.05		
African	-0.09	0.38	-0.02		
South Asian	-0.46	0.31	-0.15		
East Asian	-0.28	0.31	-0.09		
English – Fair	-0.24	0.44	-0.06		
English – Average	0.28	0.33	0.09		
English – Good	0.18	0.24	0.08		
Time in Canada	0.02	0.03	0.05		
Openness to Change – Conservation	-0.22	0.18	-0.17		
Self-Transcendence – Enhancement	-0.12	0.17	-0.10		
Step 5				0.14	0.07
Constant	0.47	0.34			
Middle Eastern	-0.00	0.24	-0.00		
African	-0.17	0.37	-0.05		
South Asian	-0.51	0.31	-0.16		
East Asian	-0.30	0.31	-0.10		
English – Fair	-0.25	0.44	-0.06		
English – Average	0.21	0.33	0.07		
English – Good	0.12	0.24	0.05		

(Table continues)

Variables	*B*	*SE B*	β	R^2	Δ R^2
Time in Canada	0.02	0.03	0.07		
Openness to Change – Conservation	-0.13	0.18	-0.10		
Self-Transcendence – Enhancement	-0.04	0.18	-0.03		
Spiritual Well-being	-0.21	0.12	-0.16		
Fate Control	0.11	0.13	0.08		
Social Cynicism	-0.10	0.12	-0.09		
Social Complexity	0.11	0.09	0.11		
Reward for Application	0.27	0.13	0.21*		

Note. R^2= *0.14 ; F*(15,132)= 1.40, *p*= 0.158
** *p*< 0.01 and **p*< 0.05.

Discussion

The current study examined the relationship between cultural knowledge and subsequent adaptation of newcomers in Canada. Specifically, the accuracy of this knowledge was assessed in relation to immigrants' psychological and behavioural adaptation. The results of the current study partially supported the main hypothesis. While knowledge of Canadian values was related to positive psychological adaptation, a similar association was not found for either knowledge of Canadian values or social axioms with behavioural adaptation. As such, the notion that cultural constructs, such as values and social axioms, are used as guiding principles (Schwartz, 1994; Schwartz et al., 2001) and behavioural guides (Bond et al., 2004b; Leung et al., 2002) by new members of a culture was not fully supported. Instead, cultural values were found to be the only type of cultural information related to newcomers' adaptation to Canada.

The current study hypothesized that an understanding of Canadian values would better explain psychological well-being than an understanding of Canadian social axioms for international and landed immigrant students. This hypothesis was supported, and consistent with previous research looking at changes in immigrant values (Domino & Acosta, 1987; Feldman et al., 1992; Georgas et al., 1996). Drawing from that previous research provides a plausible explanation for the findings of this study. Specifically, as newcomers spend time in Canada, their own values are likely shifting toward the Canadian norm. As the congruency between the participants' values and the host culture's values increase, these individuals were likely to perceive an increase in their environmental mastery and positive relationships with other cultural members that should have led to a greater purpose in life, self-acceptance, personal satisfaction and

personal growth (Ryff, 1989; Ryff & Keyes, 1995). The development of any of these components of psychological well-being would reinforce the positivity of the change in their values.

Another explanation for the demonstrated relationship between knowledge of Canadian values and psychological well-being is the belief system hypothesis (Grube et al., 1994). As previously discussed, this hypothesis argues that values are proximally related to self-conceptualizations; therefore, any shifts in an individual's values toward the host culture would mean that their self-conceptualizations or personal identity would also shift toward identification with the host culture (Grube et al., 1994). This process of change and re-identification is commonly referred to as assimilation: a process that occurs when an individual takes on a host culture's values and way of life over their own heritage culture (Berry, 1989; Berry & Sam, 1996). Any experiences of acculturative stress would act as additional motivation for the newcomer to better understand and learn about their cultural environment (Berry & Sam, 1996). Therefore, either as an intentional or unintentional process, the newcomers in this study may have experienced a shift in their values toward the host culture's values, which led to an increase in their psychological adaptation to the host culture. This shift in cultural values and identity is a complex and slow process due to a necessarily large shift in all the components of the self-concept (Birman, 1994). As such, the complexity and breadth of change that may be occurring could explain why the amount of variance explained in psychological well-being by knowledge of Canadian values was moderately small.

An important factor that provides convergent validity to these conclusions is previous cultural experience, or geographical representation. The participants in this

study with similar cultural values (i.e., Europeans) experienced the highest scores of psychological well-being compared to participants considered to be more culturally distant (i.e., Africans, East Asians; Hofstede, 1984, 2001). Also, the multiple regression analysis found that the culturally similar Europeans and culturally distant East Asians both provided significant standardized beta coefficients for psychological well-being. Overall, the results of this study suggest that the ability to acquire or understand a host culture's values due to individual value shifts was related to positive psychological well-being.

Unlike values, knowledge of Canadian social axioms was only marginally significant in predicting variance in psychological well-being. This trend toward significance can be explained by a correlational relationship found between participants' understanding of Canadians' beliefs that *careful effort and planning leading to positive outcomes* and their psychological well-being. There are two ways to interpret the lack of relationship between knowledge of Canadian social axioms and psychological well-being. First, values and social axioms may not be distinct cultural constructs as suggested by the data in this study. There was a moderate amount of intercorrelation between individual values and social axioms and, as well, with the outcome variables. The similarity in data patterns may be indicative of an overlapping of these constructs. Second, values and social axioms could be distinct constructs, as previously found (Bond et al., 2004b; Kurman & Ronen-Eilon, 2004), but the participants in this study may have been unable to articulate their knowledge of social axioms as efficiently as values. Regardless of either perspective, knowledge of Canadian social axioms was found to have no relationship with psychological well-being.

The second component of psychological adaptation was health symptoms as they relate to adaptation. Previous research has found that some ethnic groups in North America experience poorer health in relation to the level of stress in their immediate physical environment (Shweder & Sullivan, 1993), and as such, some individuals from certain cultures may express psychological distress somatically (Lay & Safdar, 2003). The relationship between physical and psychological health is most likely moderated by emotionality, with reports of stress being related to emotional lowness and a general perception of poor health (Dindia & Allen, 1992). In this study a negative correlation was found between health symptoms and psychological well-being, which indicates that international and landed immigrant student participants with poor psychological well-being were experiencing a higher number of health symptoms, and vice versa. While this correlation validates the inclusion of this measure as a component of psychological well-being, no relationships were found between knowledge of Canadian culture and health symptoms. Finding a relationship between physical health and knowledge about the host culture would be tenuous at best, unless participants were consciously aware of their level of knowledge and it caused them stress (Good, Good & Moradi, 1985).

The examination of behavioural adaptation found that cultural knowledge did not significantly explain any of the variance for the social situation difficulties experienced by the international and landed immigrant student participants. As such, the sub-hypothesis positing that social axioms would explain more of the variance in social situation difficulty than values was not supported. The only independent variable with a significant beta coefficient was the social axiom about Canadians' belief that *careful planning will lead to positive results*. A noteworthy point about this social axiom

is that it plays a particularly salient role within the sociocultural university environment. Since behavioural adaptation refers to the knowledge of culture-specific social behaviours (Ryder et al., 2000; Searle & Ward, 1990), this sociocultural environment may promote the importance of understanding specific beliefs for this specific environment and, thereby, influence which social axioms would be necessary to learn in order to participate with people within this institution (Tomasello et al., 2005).

Drawing a conclusion about the role and importance of specific social axioms within a specific sociocultural environment or otherwise is difficult to conclude without additional research. For example, it is possible that the demographics regarding the amount of time spent in Canada and previous cultural experiences was related to the other social axioms. This relation with the demographics could have, in turn, negated the contributions by social axioms to explain social situation difficulty. Or, it is possible that the demographic variables are, more or less, the best predictors of social situation difficulty, and knowledge of Canadian social axioms doesn't contribute to this explanation. Additional analyses were conducted to explore the impact of demographic variables on the prediction of social axioms.

A post-hoc analysis exploring the role of the demographic variables was conducted in order to understand Kurman and Ronen-Eilon's (2004) findings that social axioms explained functional and social adaptation. In their study, these researchers used education, age, and gender demographic variables in the first step of their hierarchical regression analysis. Since none of these variables were influential in the current study, an approach similar to the hierarchical regression performed by Kurman and Ronen-Eilon was adopted. The results of this post-hoc analysis found that

knowledge of Canadian social axioms did significantly explain a moderate amount of social situation difficulty, although the reason is unclear. However, it is clear that social axioms do have a relationship with the demographic variables, which is problematic.

Exploring the role of the demographic variables in this study and in Kurman and Ronen-Eilon's (2004) study did provide some insight into the social axiom construct. The first demographic explored was the amount of time spent in a host culture. In Kurman and Ronen-Eilon's study, participants from the Former Soviet Union lived in Israel for an average of 7.2 years, while Ethiopian participants averaged 12.4 years. For their study, the researchers chose not to use time in Israel as a covariate in the regression analysis for which they found support for knowledge of social axioms. Comparatively, this study's participants had spent a substantially lower amount of time in Canada, averaging only 3.5 years. Whereas the inclusion or exclusion of time in Canada as a covariate corroborates its relationship with knowledge of Canadian social axioms, it is also likely that the amount of time spent in Canada is an important factor to consider. The role of time in a host culture has always been a crude indicator of adaptation in a host culture (Aycan & Berry, 1996; Searle & Ward, 1990), and these results suggest that it may also play a role in the acquisition of knowledge of social axioms as it relates to behavioural adaptation.

The relationship between length of time spent in and adaptation to a host culture is based on the logical supposition that the longer an individual is in Canada, the more opportunities he or she will have to learn about Canadian culture. The results of this study partially supported this supposition. Individuals that had been in Canada the longest (i.e., more than five years) had the greatest and most significant levels of

knowledge of Canadian beliefs about *the amount of control that Canadians have over their fate* and *the multiple approaches that are available for pursuing social goals*. Knowledge of these two social axioms, fate control and social complexity, by long-term resident newcomers provides support for the importance of time in a host culture; however, the finding that only two of seven possible independent variables were well-known, limits any conclusions that can be made.

The geographical representation demographic was important to this study because the level of similarity between cultures should be related to the ability of participants to understand the new host culture (Hofstede, 1984, 2001). Kurman and Ronen-Eilon (2004) recognized and addressed this phenomenon by using two distinct culture groups, the culturally distant Ethiopian and the culturally similar Former Soviet Union immigrants. In their study, knowledge of Israeli social axioms explained functional adaptation and social adaptation in Israel for the Ethiopian participants, but not for the Former Soviet Union participants. These researchers interpreted this finding as the result of cultural distance and the Ethiopians' greater need to learn cultural knowledge compared to the Former Soviet Union participants (Kurman & Ronen-Eilon, 2004). Similarly, this study found that the culturally distant East Asian group was the only group that had a relationship with psychological adaptation. This suggests that cultural distance is important in the perceived association between knowledge of social axioms and adaptation to a host culture.

Further exploration of cultural distance found that participants from a culture that was similar to Canada (i.e., Europe) were better able to perceive and understand a number of specific Canadian values and social axioms than participants from a less

similar culture (i.e., East Asia). A similarity to Canadian culture may have contributed to the *stronger positive relations* that the culturally similar participants had with other people compared to the participants from the more culturally distant cultures. As a result, the European participants had consistently higher scores on psychological well-being and lower scores on social situation difficulty than the participants from the more distant cultures found in Africa and Asia.

Drawing conclusions about a relationship between a higher accuracy in knowledge of Canadian culture and adaptation is tenuous considering the results found in this study. An alternative and equally valid interpretation of the European participants' stronger claims of psychological adaptation could be the results of individualism. People from individualistic cultures have a tendency to self-promote positive characteristics, including factors underlying psychological well-being and social situation adjustment (Dindia & Allen, 1992; Shweder & Sullivan, 1993). From this perspective, Europeans may simply be more expressive and optimistic about their current adaptation to Canadian culture than those participants from Africa or Asia.

English proficiency was expected to have a strong influence on the results because participants with a higher proficiency in English likely have more access to cultural knowledge and cultural participation. Therefore, newcomers with high English proficiency should have a stronger relationship with Canadian knowledge than low proficiency participants. While this was true for the Self-Transcendence-Enhancement value, no such relationship was demonstrated between English proficiency and the remaining types of Canadian knowledge. The skewed distribution toward good and excellent levels of English proficiency may have been responsible for the minimal effect

of this demographic on these potential relationships.

The final demographic of consequence in this study was the participants' intention to stay in Canada. This study expected that those participants who were motivated to stay would get involved in more Canadian situations and interactions than those individuals who were planning to return home or leave Canada after their education (Berry & Sam, 1996). This higher level of commitment and involvement should have translated into a greater understanding and accuracy of Canadian culture, but the intention to stay or leave had no relationship with participants' acquisition of knowledge or adaptation. The obvious reason for this lack of influence could be attributed to the high level of institutional structure that is found within the university environment. Since all the participant students are interacting with other students and faculty in a similar manner, this mitigates any association between the motivation to stay in Canada and the level of interaction that participants had with Canadians.

The extent to which the demographics affected the social axiom construct, compared with the values construct, was unexpected. The adaptation of immigrants to a host culture has been related to a range of exogenous variables, such as length of residence, generational status, education, language mastery, social disadvantage, and cultural distance (Aycan & Berry, 1996; Ward & Searle, 1991). The lack of a robust relationship with adaptation in the presence of the demographics brings into question the validity of social axioms as a distinct cultural construct.

Social axioms appear to be moderated by the sociocultural context from which they were extracted. Schwartz (1992, 1994, 2003) and Leung et al. (2002) both based their cultural constructs on the premise that there are universal, or pan-cultural,

constructs that describe culture and cultural differences. Schwartz (1994) focused on the premise that all humans must cope with universal needs for survival: i.e., biological needs, the need for coordinated social interaction, and the need for the survival of their in-group. In comparison, Leung et al. focused on generalizable social beliefs that were presumed to improve functional survival within a sociocultural environment; i.e., information that can be used to guide behaviour, maintain ego-defences or self-worth, express an individual's values, and understand the world. While both constructs appear to be approaching culture from a similar needs-based perspective, a key difference is that values are constructed from needs derived from outside of a sociocultural context and social axioms are constructed from needs based on the sociocultural context. This distinction appears to be an important qualitative difference in describing culture and does explain some of the problems finding significant results in this study.

The problem with the social axiom's strong relationship with the sociocultural context is that it means that the social axiom construct overlaps with Schwartz's (1992, 1994) values construct. Since values define and explain many aspects of a sociocultural context, any construct within that context is somewhat related to the values that define it. An example of this overlap in constructs comes from one of the roles that social axioms perform as an expression of personal values (Leung et al., 2002). Cross-cultural research has established that many of the personal values that an individual possesses are actually variations of cultural values that are learned during the developmental stages of childhood (Hofstede, 1984, 2001). As such, those social axioms that articulate personal values are actually articulating some aspect of cultural values, which demonstrates how the distinction between values and social axioms is ambiguous and

complex at best.

In addition to the potential relation between values and social axioms, there were problems with the replication of the original five-factor solution. While this study did replicate most of the original factors reported by Leung et al. (2002), there were many discrepancies with the question-items and the factors on which these items loaded. For example, the items that represented the Spirituality axiom of Leung et al. were identified by the Canadian participants in this study as two separate and distinct social axioms: Spiritual Well-being and Spiritual Complexity. Other studies have also had trouble replicating the original factors and have found additional axioms, such as Harmony (Safdar et al., 2006) and Interpersonal Harmony (Kurman & Ronen-Eilon, 2004). Currently, Leung and colleagues are in the process of refining the social axiom scale with the removal of unstable items (i.e., current scale items = 39) and revising item phrasing (Kwok Leung, personal communication, February 22, 2008). These studies indicate that there are serious problems and unknown influencing factors that make the social axiom construct somewhat unreliable in the exploration of culture.

Some of these difficulties with the interpretation and explanation of social axioms in relation to the demographic variables indicate that this construct may not be pan-cultural. Any construct that is intended to describe or explain culture and sociocultural behaviour must be robust against different cultural contexts. For instance, values have been found to be highly consistent in 60 different countries (Schwartz et al., 2001). If social axioms are premised to be behavioural guides for a culture, then this construct needs to reach a higher level of reliable replication in different sociocultural settings. As

this construct stands now, the utility of social axioms as a descriptor of culture and a predictor of cultural behaviour is limited.

A few social axiom researchers have discussed an alternative understanding of social axioms. Social axioms could be, essentially, the locus of control construct with a social component about the world, which reflects the increased acceptance of the culturally specific nature of most social psychology (Rees Lewis, personal communication, November 5, 2008). Locus of control is a general belief about the causes of events that happen to a person or beliefs that act as “generalized expectancies” (Rotter, 1966). To some degree, this idea has been acknowledged by Leung et al. (2002) who stated that social axioms are a complimentary framework to the locus of control. Within this interpretation, social axioms are not just about the manipulation of the environment by the individual, as locus of control theorists have postulated, but also a recognition that the social world around an individual can produce outcomes in his or her life.

Rotter’s (1966) conceptualization of locus of control focuses on the individual’s perception of the outcomes in his or her life as being produced by him or herself (i.e., internally) or by the outside world (i.e., externally). Later, Levenson (1973) argued that there were different types of external control; external control about other social beings was called Powerful Others and external control without the action of a social other was called Chance. Powerful Others control appears to be similar to the Spirituality axiom, and Chance control appears to be similar to the Fate Control axiom. The internal factor for locus of control is conceptually similar to Reward for Application, which Leung et al. (2002) have commented on as being distinct from one another. The remaining two

social axioms, Social Cynicism and Social Complexity, can be perceived as additional dimensions that relate to beliefs about the social environment, potentially as internal-external interpretations of control over the social environment (Rees Lewis, personal communication, November 5, 2008).

If social psychology has learned anything from cross-cultural psychology in the last 25 years (i.e., since Hofstede, 1984), it is the significance of the Individualism-Collectivism dimension of cultural variation. Social axioms could be the locus of control with extra dimensions relating to collectivism or the interconnectedness of human life (Rees Lewis, personal communication, November 5, 2008). It is under this new perspective that social axioms could become a valuable social construct, in the same manner as locus of control (Smith, Dugan & Trompenaars, 1996), in a wide variety of research areas.

Research Limitations

The purpose of this research was to examine the usefulness of values and social axioms as contributors in explaining the phenomenon of host culture adaptation. An obvious limitation of this study was the assumption that international and landed immigrant students arrived in Canada without any knowledge about Canada and then interacted with Canadians to develop an understanding of Canadian values and social axioms. This is most likely not the case considering the current level of globalization and communication. Before migrants choose to move away from their culture of origin, they are often able to learn about potential destinations through various communication mediums (i.e., Internet, books, communication with others) to develop a better understanding of which new host culture will meet their needs. Furthermore, most

newcomers continue to have access to and interactions with their previous culture of origin through various communication methods. As such, newcomers to Canada most likely arrive with prior knowledge of Canada and maintain or participate in the previous culture, all of which creates a dynamic process of cultural learning and adaptation. This effect of globalization and increased communication was not measured or considered in this study, which limits interpretation and generalization of the results.

In addition, there were complications with the accurate comprehension and articulation of the international and landed immigrant student participants' understanding of Canadian values and social axioms. This could be interpreted as a problem with the methodology used in this research. The post-positivist approach taken by this research must assume that culture and cultural adaptation are, at some level, static and that knowledge and behaviours are consistent and stable (Kenny, 1996). The potent reality is that the social phenomena under examination are based within a dynamic process of change that negates any static conceptualization of the process. Therefore, there are problems with the use of close-ended items and rating scales that summarize "a highly contingent world in which few relationships are so dependable that they hold across a wide variety of persons, settings, and times" (Cook, 1985, p. 41).

Considering the sophisticated nature of culture and adaptation, there are a number of issues that occurred when the dynamics of sociocultural knowledge and interaction were reduced to a set of static factors and question items. The task of identifying how Canadians would endorse values and social axioms was particularly difficult. To make the estimate of Canadian values and social axioms, these participants were given the demanding task to identify and interpret the host cultural values and

social axioms. The conceptualization of one's own beliefs is a complicated task due to the abstract nature of values and social beliefs (Singelis et al., 2003; Hofstede, 2001); so, the task of understanding the beliefs of another person from a different culture is even more complicated.

The veracity of this task difficulty was exemplified by the amount of variance in the estimates of the more abstract cultural beliefs compared to the less abstract beliefs. Specifically, the participants were more uniformed in their estimates of the Spiritual Well-being axiom, Fate Control axiom, Spiritual Complexity axiom, Social Cynicism axiom, and Reward for Application axiom than for the Social Complexity axiom, Openness to Change – Conservation value, and Self-Transcendence-Enhancement value. Social Complexity is the least tangible social axiom, which could explain why participants had more difficulty making accurate estimates of this social axiom than the other axioms. Recall that the Social Complexity axiom is about the belief that there are no rigid rules for culture and that human behaviour is inconsistent, while the remaining social axioms are about concrete perceptions of causal or correlational relationships between entities (Leung et al., 2002). Values, on the other hand, are naturally more difficult to comprehend or articulate due to their trans-situational nature and use as ideals (Rokeach, 1973; Schwartz, 1994). Schwartz has previously found that participants from different cultures experienced problems accurately interpreting and reporting their own values due to the moderately high level of abstraction found in the question items and concepts (Schwartz et al., 2001). The creation of the less abstract and easier-to-understand Portrait Values Questionnaire may have lessened the difficulty of this task, however, the task appeared to still be difficult for some participants.

The complications in the accurate comprehension and articulation of the participants' understanding of Canadian culture and adaptation in Canada may have also resulted from difficulty in articulating ideas as quantified responses in the form of a scale. A few international and landed immigrant student participants did report that they struggled with the task of understanding items and estimating Canadian beliefs. Previous research has found that individuals who speak English as a second language usually have smaller lexicons than native speaking individuals (Nation, 1997). Therefore, even though the majority of participants made self-reports of good or better English proficiency, these participants may have experienced difficulty with items that used unfamiliar wording, or the scale response anchors may have been culturally inappropriate for the task. International and landed immigrant student participants' familiarity with the words and concepts that were framed in Western idioms in this study may have been an important limitation in this study.

The take-home message is that the use of the post-positivist approach to this research phenomenon may have been moderately unsuitable for the task. The demands of translating the complex social dynamics of the host culture into static scale responses appeared to be difficult for the participants. Despite these limitations, this study did find a relationship that indicates that future studies should continue to explore the understanding of international and landed immigrant students' knowledge of Canada, possibly using qualitative and open-ended questions. This approach would allow the participants to use their own words and understanding and allow researchers to gain greater insight into this phenomenon.

Research Challenges

A number of challenges were encountered while conducting this research. Unlike the limitations of this study that compromised the integrity of the research and results, a review of the theoretical, methodological and sociocultural challenges provides an additional context for a deeper understanding the results of this study.

Theoretical Challenges. The largest challenge of this research was designing a study that bridged two complex theories: adaptation to a host culture and the universal dimensions of culture. Each theory is rife with complexity and controversy that became more complicated when they were combined together in one study. On one hand, the exact relationship between values and social axioms has not yet been clearly determined by researchers. An important issue that needs to be examined is the extent to which both constructs share variance, and if this shared variance is actually a construct overlap or moderated by another variable. From the system belief theory, the hierarchical relationship of these two concepts suggests that social axioms are strongly related and submissive to values (Grube et al., 1994). This study attempted, but failed, to provide definitive support for either concept as distinct from each other or as related to each other. For the Canadian participants, there was a minor amount of correlation between their values and social axioms. For the international and landed immigrant student participants, there was a greater amount of similarity in their perception of knowledge of Canadian values and social axioms and how these concepts interacted with each other and the dependent variables. It would appear that there is a certain level of complexity in distinguishing between these two cultural concepts for newcomers. Continued research with these concepts of culture will have to clarify how

values and social axioms are related, as well as examine how outsiders perceive the constructs. Such research will provide a better understanding of how newcomers adapt to a new culture.

A second theoretical challenge arises from acculturation research, which has failed to reach a satisfactory level of consensus for an operational model of acculturation. Current thought has moved beyond single dimension models (e.g., Phinney, 1989) and bi-dimensional models (e.g., Berry & Sam, 1996) of acculturation, and towards complex multi-dimensional models (e.g., Arends-Toth & van de Vijver, 2006; Safdar, Lay, & Struthers, 2003). This research did not examine a complete model of acculturation as it relates to knowledge of a host culture. Due to the inherent complexity of acculturation, this study focused on the outcome variables of psychological and behavioural adaptation. A comprehensive understanding of the relationship of host cultural knowledge with acculturation was too ambitious a task for this student research project, which limits the generalizability of this research. Furthermore, a lack of community consensus about the process of acculturation and an appropriate model will limit the perceived utility of this study by some acculturation researchers.

Methodological Challenges. Looking at the procedures used in this study, there were a few issues that may have had an effect on the collection and analysis of data. For the Canadian sample, all 150 participants were recruited through the University of Saskatchewan's psychology participant pool. This is a convenience sample that is representative of Canadian values and social axioms as they exist at the University of Saskatchewan, and possibly in Saskatchewan. Since culturally determined values, and

presumably social axioms, are established and prevalent throughout a society (Hofstede, 1984, 2001), the results of this convenience sample are generalizable to the Saskatchewan population. It is not likely that these results can be generalized to the broader Canadian population due to the diversity of regional differences found across Canada.

For the international and landed immigrant student sample, there was a high level of heterogeneity in the cultural characteristics of participants that may have resulted in a high level of variation in data responses. This variation can be attributed to the difficulties encountered in recruiting participants from a small international and landed immigrant student population that was widely dispersed across the University of Saskatchewan. Despite a partnership with the International Students Office, most participants were recruited through random volunteering and *gatekeeper* participants—that is, people who volunteered to recruit from their own social network. The recruitment procedure, as well as the diversity of cultural and academic characteristics, very likely influenced the results of this study.

While the lack of homogeneity in the cultural characteristics of participants may have increased the difficulty in finding significant results, it is an excellent example of the complexity commonly found in immigration research. Immigrants, refugees, and international students migrate to a new culture for different reasons and under different circumstances. Each person brings with them a different set of cultural and personal beliefs that affects how they interpret and interact with the new culture. Post-positivistic research, such as this study, is limited by the assumptions of a universal truth that fails to fully encompass the reality of the participant. As such, newcomers to a host culture

will each have a unique experience that cannot be captured by a survey. Furthermore, the difficulties experienced by these participants in understanding and completing this survey are reflective of the difficulties experienced in understanding and interacting with Canadian culture.

Nevertheless, all participants were offered assistance with completing the questionnaire; however, relatively few participants took advantage of this support due to the length of the questionnaire—over 270 items. The majority of participants chose to complete the questionnaire at their own convenient time and place. The possibility exists that the researcher's inability to manage the participants' environments and experiences while completing the questionnaire may have increased measurement error. For those participants who found the process of estimating Canadian values and social axioms a difficult task, a lack of supervision may have encouraged negligent responses. In anticipation of this eventuality, every precaution was made to support accurate responses: email and phone number contacts, availability of one-on-one support, and detailed descriptions and instructions on the questionnaire. As a result, examination of participants' responses found relatively few missed items, or patterned responses, which suggests that participants attempted to respond appropriately and consistently across all items.

Sociocultural Challenges. Another obstacle that affects adaption to a host culture is the quantity and quality of opportunities to interact with the host culture members (Berry, 1989, 1997; Berry & Sam, 1996; Ryder et al., 2000; Searle & Ward, 1990). While it is possible to learn about a culture without direct contact, deep learning and understanding of a new host culture is based on an informative interaction with host

culture members. A few participants informed the researcher that they had limited access or opportunity to interact with the host culture and that they were experiencing difficulties in adapting to Canada. For example, a Muslim woman participant reported that she was uncertain about her answers regarding Canadian beliefs because she lacked experience with Canadians. Although she had been in Canada for two years, it had taken her more than one year to make her first Canadian friend, despite continuous efforts to do so. She attributed this lack of openness by Canadians to her wearing a hijab, a traditional headscarf worn by some Muslim women, which made people uncomfortable and avoidant. As this woman demonstrated, opportunities to understand Canadian culture are also influenced by the opportunities that Canadian society offers to newcomers. While the University of Saskatchewan is a welcoming university, it is not necessarily an open university. Several international and landed immigrant students mentioned that it was difficult to get involved with Canadians, which may have limited their ability to learn from Canadians and their options for increasing adaptation to Canada.

Implications

This study has practical implications for both the international and landed immigrant students attending university and the immigrants and refugees attending sociocultural training programs. Using Rokeach and Cochrane's (1972) process of confronting participants with the discrepancy between their own value expression and those of the host culture can create awareness and changes in that person's own value expression toward the host culture. Using this type of procedure could help international students and landed immigrants to develop strategies for understanding and adjusting

to the new host culture. Providing clarity about the shifting dynamics of values and their relationship to psychological well-being could help facilitate adaptation across a broader range of sociocultural contexts that would otherwise be more challenging. Furthermore, the ability of this study to find a significant relationship in a population so diversely represented (i.e., over 50 countries) implies that this type of sociocultural training could be administered broadly to all newcomers to Canada.

Discrepancy training could also be used to help cultural minorities to overcome social structural barriers that are often encountered as systemic discrimination. Previous research by Calvez and Paulhus (2004) found that cultural minorities were recommended less highly for jobs due to perceived cultural incompatibilities in self-presentation styles and expression. Participants in this study were penalized for the way in which they presented their information since it was not appreciated as much as the way host culture members presented information. This represents a structural barrier to employment or promotion that could be overcome using discrepancy training procedures, outlined above, that focus on elucidating specific institutional expectations and values. Schwartz et al. (2001) found broad support for his ten values around the world, but each culture prioritizes uniquely. The results in this study indicate that different sociocultural settings might also prioritize the importance of specific values. The implication of this finding is that international student offices, universities, community organizations and cross-cultural training programs should teach about values as endorsed by the national culture and any associated institutions.

There are practical implications for individuals that are interested in researching cultural knowledge as it affects adaptation. This study has demonstrated that there are

a number of challenges that are involved in conducting this type of research. Some of these challenges are inherently a part of cross-cultural and post-positivistic research, whereas others are particular to the international and landed immigrant student population. Future researchers should take heed of the challenges identified: the limited accessibility to international and landed immigrant students commonly found at Canadian universities; the issues of cultural sensitivity and language that can restrict the usefulness of collected data; and the need to maintain a flexible approach to data collection in order to improve recruitment and participation.

Future Research

Not only did this study find some support for the hypotheses, but it also raised a number of questions that should be addressed by future researchers. An important premise of this research was that Canadian values and social axioms could be estimated accurately based on knowledge of Canadian society. To determine if it is possible to accurately know and report this type of knowledge, future research should examine the ability of Canadian participants to estimate Canadian values and social axioms. Exploring the amount of variation found in Canadian estimates would help present a better context for understanding the international and landed immigrant student participants' cultural knowledge of the host culture. Such research would also provide insight into the validity of this research paradigm of cultural learning.

Another question that arose from this research was the importance of certain values or social axioms in the adaptation process. Specifically, certain values and social axioms were found to have relationships with psychological well-being and the sociocultural context of the university, while others did not show the same relationship.

It is possible that this study simply failed to show these relationships, but it is also possible that there are advantages to learning and understanding certain types of cultural knowledge over others. For example, Shalom Schwartz (Shalom Schwartz, personal communication, July 29, 2008) suggested that the Self-direction, Stimulation and Hedonism values should be positive predictors, while Conformity, Security, and Power should be negative predictors of psychological well-being for this particular set of participants. For the international and landed immigrant student participants, this study did find an increased level of accuracy for the value that was highly representative of the university institution (i.e., Self-Transcendence-Enhancement compared to Openness to Change-Conservation, respectively). Rather than looking at cultural knowledge holistically, it is likely that newcomers to a host culture take a differentiated and prioritized perspective to learning. Future research should examine this differentiated learning of cultural knowledge and its relationship with adaptation to a host culture.

Several participants proposed a third area for future researchers to examine. In discussions with participants, a recurring theme was the difficulty in distinguishing between their own cultural understandings and those of Canadians. There are many possible explanations for this difficulty. For example, the problem could be due to the abstract nature of values and social axioms, in which case researchers would need to explore alternative ways of voicing, wording, or measuring these two constructs. Alternatively, the problem may be related to the changing condition, or shift, in the newcomer's own values and social axioms towards the host culture. In this case, longitudinal studies would be ideal in documenting the relationships found in the

acculturation process looking at newcomers' reports of their own values and social axioms and those of the new host culture. Finally, it is possibly that the newcomers are being affected by proactive interference in forgetting. Essentially, proactive interference occurs when an individual is unable to retrieve or recall new information because the information is confused or blocked by previously learned information, especially if the new and old information are similar in nature, like values and social axioms (Galotti, 1999). Future research should examine the process of cultural learning and shredding (Berry & Sam, 1996) to determine if previous cultural knowledge does affect new host culture learning.

The topic and research on cultural learning and adaptation to a host culture is both large and broad. There are a number of future research projects that could be suggested from findings of this study or similar studies. Future research could examine the relationship between values and social axioms, the ability of immigrants from different generations to accurately report host culture beliefs, or the influence of cultural similarity or difference on newcomers' ability to learn values or social axioms. What is important is that researchers should maintain a focus on finding aspects of the acculturation phenomenon that can be used to increase understanding and support of newcomers adapting to a new host culture.

Conclusion

The true test of applied research is to take social or cultural theory and to use these theories to understand, improve or solve real world issues. In so doing, these theories can be confirmed and validated in a way that sometimes exceeds confirmation by experimental or quasi-experimental procedures. Even minor success in this

endeavour to use scientific knowledge in the real world can lead to important gains for society.

This study was able to demonstrate this principle of applied research by demonstrating that knowledge of culture was related to the process of adaptation. The international and landed immigrant students at the University of Saskatchewan with the strongest knowledge of Canadian values also had the highest degree of psychological adaptation. In the future, acculturation researchers and social program administrators should be able to use and expand on these results, and the lessons learned from this study, to continue exploring the acculturation process and how to increase the ability of newcomers to achieve a high quality of life.

References

Arends-Toth, J. V. & van de Vijver, F. J. R. (2006). Issues in conceptualization and assessment of acculturation. In M.H. Bornstein & L.R. Cote (Eds.) *Acculturation and parent-child relationships: Measurement and development* (pp.33-62). Mahwah, NJ, USA: Lawrence Erlbaum.

Aycan, Z., & Berry, J. W. (1996). Impact of employment-related experiences on immigrants' psychological well-being and adaptation to Canada. *Canadian Journal of Behavioural Science, 28*, 240-251.

Ball-Rokeach, S. J., Rokeach, M., & Grube, J. (1984). *The Great American Value Test.* New York, NY, USA: Free Press.

Berry, J. W. (1970). Marginality, stress and ethnic identification in an acculturated Aboriginal community. *Journal of Cross-cultural Psychology, 1*, 238-252.

Berry, J. W. (1989). Acculturation attitudes in plural societies. *Applied Psychology: An International Review, 38*, 185-206.

Berry, J. W. (1997). Immigration, acculturation and adaptation. *Applied Psychology, 46*, 5-68.

Berry, J. W., & Sam, D. (1996). Acculturation and adaptation. In J. W. Berry, M. H. Segall, & C. Kagitcibasi (Eds.), *Handbook of Cross-cultural Psychology, Vol. 3: Social, Behavior and Applications* (pp. 291- 325). Boston, MA, USA: Allyn & Bacon.

Bilsky, W., & Schwartz, S. H. (1994). Values and personality. *European Journal of Personality, 8*, 163-181.

Birman, D. (1994). Acculturation and human diversity in a multicultural society. In E. J. Trickett, R. J. Watts, & D. Birman (Eds.), *Human diversity: Perspectives on people in context* (pp. 261–284). San Francisco, CA, USA: Jossey-Bass.

Bond, M. H., Leung, K., Au, A., Tong, K., de Carrasquel, S. R., Murakami, F. et al., (2004a). Culture-level dimensions of social axioms and their correlates across 41 countries. *Journal of Cross-Cultural Psychology, 35,* 548-570.

Bond, M. H., Leung, K., Au, A., Tong, K. K., & Chemonges-Nielson, Z. (2004b). Combining social axioms with values in predicting social behaviours. *European Journal of Personality, 18*, 177-191.

Burvill, P. W. (1984). Migration and mental disease. In J. E. Mezzich & C. E. Berganza (Eds.), *Culture and Psychopathology* (pp. 243-256). New York, NY, USA: Columbia University Press.

Calvez, S. S., & Paulhus, D. L. (2006). Self-presentation styles in a job interview situation: The impact of culture and personality. *Canadian Psychology Association's 67th Annual Convention*, Calgary, Alberta, poster presentation.

Canada (2006). Canadian Multiculturalism Act. Retrieved on November 21, 2006 from http://www.pch.gc.ca/progs/multi/policy/act_e.cfm.

Chapdelaine, R. S. (1998). *Social skills difficulty model of culture shock for male international graduate students.* Saskatoon, SK: University of Saskatchewan, unpublished Master's thesis.

Chapdelaine, R. S., & Alexitch, L. (2004). Social skills difficulty: Model of culture shock for international graduate students. *Journal of College Student Development, 45*, 167-184.

Cook, T. D. (1985). Postpositivist critical multiplism. In L. Shatland, & M. M. Mark (Eds.), *Social Science and Social Policy* (pp. 21-62). Beverly Hills, CA: Sage Publications, Inc.

Deaux, K. (2006). A nation of immigrants: Living our legacy. *Journal of Social Issues, 62*, 633—651.

Dindia, K., & Allen, M. (1992). Sex differences in self-disclosure: A meta-analysis. *Psychological Bulletin, 112*, 106-124.

Domino, G., & Acosta, A. (1987). The relation of acculturation and values in Mexican-Americans. *Hispanic Journal of Behavioural Science, 9*, 131-150.

Farh, J. L., Leong, F. T. L., & Law, K. S. (1998). Cross-cultural validation of Holland's model in Hong Kong. *Journal of Vocational Behaviour, 52*, 425-440.

Feldman, S., Mont-Reynaud, R., & Rosenthal, D. (1992). When East moves West: The acculturation of values of Chinese adolescents in the U.S. and Australia. *Journal of Research on Adolescence, 2*, 147-173.

Furnham, A., & Bochner, S. (1982). Social difficulty in a foreign culture: An empirical analysis of culture shock. In S. Bochner (ed.), *Culture in contact: Studies in cross-cultural interaction* (pp. 161-198). Elmsford, NY, USA: Pergamon Press.

Galotti, K. M. (1999). *Cognitive Psychology In and Out of the Laboratory*. Bemont, CA, USA: Wadsworth Publishing Company.

Georgas, J., Berry, J. W., Shaw, A., Christakopoulou, S., & Mylonas, K. (1996). Acculturation of Greek family values. *Journal of Cross-Cultural Psychology, 27*, 329–338.

Good, B., Good, M., & Moradi, R. (1985). The interpretation of Iranian depressive illness and dysphoric affect. In A. Kleinman & B. Good (Eds.), *Culture and depression: Studies in the anthropology and cross-cultural psychiatry of affect and disorder* (pp. 369–428). Berkeley, CA, USA: University of California Press.

Graves, T. D. (1967). Psychological acculturation in a tri-ethnic community. *Southwestern Journal of Anthropology*, 23, 337–350.

Grube, J. W., Mayton, D. M., & Ball-Rokeach, S. J. (1994). Inducing change in values, attitudes and behaviours: Belief system theory and the method of value self-confrontation. *Journal of Social Issues, 50*, 153-173.

Gundara, J. S. (2001/02). Multiculturalism in Canada, Britain and Australia: The Role of Intercultural Education. *London Journal of Canadian Studies, 17*, 40-59.

Hofstede, G. (1984). *Culture's Consequences: Differences in Work-related Values*. Beverly Hills, CA, USA: Sage Publications Inc.

Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviours, Institutions and Organizations Across Nations*, 2nd Ed. Thousand Oaks, CA, USA: Sage Publications Inc.

Hofstede, G. H., & Hofstede, G. J. (2005). *Cultures and Organizations: Software of the Mind*. New York, NY, USA: McGraw Hill.

Kenny, D. A. (1996). The design and analysis of social-interaction research. *Annual Review of Sociology, 47*, 59–86.

Kurman, J., & Ronen-Eilon, C. (2004). Lack of knowledge of a culture's social axioms and adaptation difficulties among immigrants. *Journal of Cross-Cultural Psychology, 35*, 192-208.

Lay, C. H., & Safdar, S. F. (2003). Daily hassles and distress among college students in relation to immigrant and minority status. *Current Psychology: Developmental, Learning, Personality, Social, 22*, 3-22.

Leung, K., Bond, M. H., & Schwartz, S. H. (1995). How to explain cross-cultural differences: Values, valences and expectancies. *Asian Journal of Psychology, 1*, 70-75.

Leung, K., Bond, M. H., de Carrasquel, S. R., Munoz, C., Hernandez, M., Murakiami, F., et al., (2002). Social axioms: The search for universal dimensions of general beliefs about how the world functions. *Journal of Cross-Cultural Psychology, 33*, 286-302.

Levenson, H. (1973). Multidimensional locus of control in psychiatric patients. *Journal of Consuiting and Clinical Psychology, 41*, 397-404.

Morris, M. W., Williams, K. Y., Leung, K., Bhatnagar, D., Li, J. F., Kondo, M., et al. (1998). Culture, conflict management style, and underlying values: Accounting for cross-national differences in styles of handling conflicts among US, Chinese, Indian and Filipino managers. *Journal of International Business Studies, 29*, 729–748.

Nation, P. (1997). Vocabulary size, text coverage & word lists. In Schmitt, N., & McCarthy, M. (Eds.), *Vocabulary: Description, acquisition, pedagogy* (pp. 6-19). New York, NY, USA: Cambridge University Press.

O'Connor, D. B., & Shimizo, M. (2002). Sense of personal control, stress and coming style: A cross-cultural study. *Stress and Health: Journal of the International Society for the Investigation of Stress, 18*, 173-183.

Parekh, B. (2000). *Rethinking Multiculturalism. Cultural Diversity and Political Theory*. Presented as a keynote address at the Metropolis Conference 2000. Retrieved on November 21, 2006 from http://international.metropolis.net/events/vancouver/bio/Paper_PAREHK.html

Pettigrew, T. F. (1998). Reactions toward the new minorities of Western Europe. *Annual Review of Sociology, 24*, 77-103.

Phinney, J. W. (1989). Stages of ethnic identity development in minority group adolescents. *Journal of Early Adolescence, 9*, 34-49.

Posavac, E. J., & Carey, R. G. (1997). *Program Evaluation: Methods and Case Studies*. Englewood Cliffs, NJ, USA: Prentice Hall.

Rokeach, M. (1973). *The Nature of Human Values*. New York, NY, USA: Free Press.

Rokeach, M. (1979). *Understanding Human Values.* New York, NY, USA: Free Press.

Rokeach, M. (1980). Some unresolved issues in theories of beliefs, attitudes and values. In H. E. Howe & M. M. (Eds.), *Nebraska Symposium on Motivation,* (pp. 261-304). Lincoln, NB, USA: University of Nebraska Press.

Rokeach, M. (1981). *The Three Christs of Ypsilanti*. New York, NY, USA: Columbia University Press.

Rokeach, M. (1982). *Value Survey*. Palo Alto, CA, USA: Consulting Psychologists Press.

Rokeach, M., & Cochrane, R. (1972). Self-configuration and confrontation with another as determinants of long-term values change. *Journal of Applied Social Psychology, 22*, 283-292.

Rokeach, M., & Mezel, L. (1966). Race and shared belief as factors in social choice. *Science, 151*, 167-172.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80*, 1-28.

Rudmin, F. W. (2003). Critical history of the acculturation psychology of assimilation, separation, integration and marginalization. *Review of General Psychology, 7*, 3-37.

Rupf, M., & Boehnke, K. (2002 July). *Hierarchic self-interest and political delinquency: Do social axioms serve as moderators?* Poster presented at the regional conference of the Internal Association for Cross-Cultural Psychology, Winchester, UK.

Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity and adjustment. *Journal of Personality and Social Psychology, 79*, 49-65.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*, 1069-1081.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719-727.

Ryff, C. D., & Singer, B. (1996). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics, 65*, 14 -23.

Safdar, S., Lay, C., & Struthers, W. (2003). The process of acculturation and basic goals: Testing a multidimensional individual difference acculturation model with Iranian immigrants in Canada. *Applied Psychology: An International Review, 52*, 555-579.

Safdar, S., Lewis, J. R., & Daneshpour, M. (2006). Social axioms in Iran and Canada: Intercultural contact, coping and adjustment. *Asian Journal of Social Psychology, 9*, 123-131.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In Zanna, M. P. (Ed), *Advances in Experimental Social Psychology*, *Vol. 25* (pp. 1-65). San Diego, CA, USA: Academic Press.

Schwartz, S. H. (1994). Are there universal aspects in the structure and content of human values? *Journal of Social Issues, 50*, 19-45.

Schwartz, S. H. (2003). Mapping and interpreting cultural differences around the world. In H. Vinken, J. Soeters, & P. Ester (Eds.), *Comparing cultures, dimensions of culture in a comparative perspective.* Leiden, Netherlands: Brill.

Schwartz, S. H., & Bilsky, W. (1990). Towards a theory of universal content and structure of values: Extensions and cross-cultural replications. *Journal of Personality and Social Psychology, 58*, 878-891.

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001) Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology, 32*, 519-542.

Schwartz, S. H., & Sagiv, L. (1995). Identifying culture specifics in the content and structure of values. *Journal of Cross-Cultural Psychology, 26*, 92-116.

Schwartz, S. H., Verkasalo, M., Antonovsky, A., & Sagiv, L. (1997). Value priorities and social desirability: Much substance, some style. *British Journal of Social Psychology, 36*, 3-18.

Searle, W., & Ward, C. (1990). The prediction of psychological and sociocultural adjustment during cross-cultural transitions. *International Journal of Intercultural Relations, 14*, 449-464.

Shweder, R. A., & Sullivan, M. A. (1993). Cultural psychology: Who needs it? *Annual Review of Psychology, 44,* 497-523.

Sidanius, J. (1993). The psychology of group conflict and the dynamics of oppression: A social dominance perspective. In W. McGuire, & S. Iyengar (Eds.), *Current Approaches to Political Psychology* (pp.183-219). Durham, NC, USA: Duke University Press.

Singelis, T. M., Hubbard, C., Her, P., & An, S. (2003). Convergent validation of the Social Axiom Survey. *Personality and Individual Differences, 34,* 269-282.

Smith, P. B. (2004). Acquiescent response bias as an aspect of cultural communications style. *Journal of Cross-Cultural Psychology, 35*, 50-61.

Smith, P. B., & Bond, M. H. (1999). Soc*ial Psychology: Across Cultures, second edition*. Needham Heights, MA, USA: Allyn & Bacon.

Smith, P. B., Dugan, S., & Trompenaars, F. (1996). National culture and the values of organizational employees: A dimensional analysis across 43 nations. *International Journal of Psychology, 30*, 377–400.

Statistics Canada (2003). *Canada's Ethnocultural Portrait: The Changing Mosaic. (Catalogue No. 96F0030XIE2001008).* Ottawa, Canada: Minister of Industry.

Statistics Canada (2006). *Immigrant population by place of birth, by province and territory (2006 Census).* Ottawa, Canada: Minister of Industry. Retrieved on December 16, 2008 from http://www40.statcan.gc.ca/l01/cst01/demo34a-eng.htm.

Statistics Canada (2007). *Portrait of the Canadian Population in 2006: National portrait.* Retrieved on March 15, 2007 from http://www12.statcan.ca/english/census06/analysis/popdwell/NatlPortrait1.cfm

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics, 4th Edition*. Needham Heights, MA, USA: Allyn and Bacon.

Tomasello, M., Carpenter, M., Call, J., Behne, T., & Moll, H. (2005). Understanding and sharing intentions: The origins of cultural cognition. *The Behavioral and Brain Sciences, 28*, 675 -735.

Triandis, H. C. (2000). Culture and conflict. *International Journal of Psychology, 35*, 145-152.

Van de Vijer, F.J. R., & Phalet, K. (2004). Assessment in multicultural groups: The role of acculturation. *Applied Psychology: An International Review, 53*, 215–236.

Ward, C. (1997). Cultural learning, acculturative stress, and psychopathology: Three perspectives on acculturation. *Applied Psychology: An International Review, 46*, 58-62.

Ward, C. (2006). Acculturation, identity and adaptation in dual heritage adolescents. *International Journal of Intercultural Relations, 30*, 243-259.

Ward, C., Bochner, S., & Furnham, A. (2001). *The psychology of culture shock*. London, UK: Routledge.

Ward, C., & Kennedy, A. (1994). Acculturation strategies, psychological adjustment, and sociocultural competence during cross-cultural transition. *International Journal of Intercultural Relations, 18*, 329-343.

Ward, C., & Rana-deuba, A. (1999). Acculturation and adaptation revisited. *Journal of Cross-Cultural Psychology, 30*, 422-442.

Appendix A

International and landed immigrant student sample demographic information

Demographic Variable	*%*	*N=*
Gender		
Female	52.5	84
Male	47.5	76
Age		
17 thru 21	25.3	39
22 thru 25	24.7	38
26 thru 28	23.4	36
29 thru 50	26	40
Not reported	.6	1
Geographical Representation		
Africa	11.3	18
East Asia	30.6	49
Europe	15	24
Middle East	15	24
South Asia	28.1	45

(Table continues)

Demographic Variable	*%*	*N=*
Religion		
Christian	25.6	41
Islam	17.5	28
Buddhism	9.4	15
Hinduism	9.4	15
Sikhism	3.1	5
No religion	35	56
Student Status		
Undergraduate	40.6	65
Graduate	56.9	91
Did not indicate	2.5	4
Area of Study		
Arts	13.8	22
Science	27.5	44
Commerce-Business	17.5	28
Engineering	8.1	13
Health –Social Work	9.4	15
Undeclared – Unknown	23.8	38

(Table continues)

Demographic Variable	*%*	*N=*
Previous Education Completed		
Elementary School	6.3	10
Secondary School Diploma	41.9	67
Undergraduate Degree	32.5	52
Graduate Degree	24.4	39
Self-reported English Proficiency		
Poor	0	0
Fair	6.9	11
Average	16.3	26
Good	50.6	81
Excellent	26.3	42
Time in Canada		
1 year or less	34.4	55
2 to 4 years	39.4	63
5 or more years	25.6	41

(Table continues)

Demographic Variable	*%*	*N=*
Intend to Stay in Canada		
Yes	61.3	98
No	33.1	53
Maybe/Not sure	5.6	9
Immigrant Status		
Student Visa	66.9	107
Canadian Citizen	16.3	26
Landed Immigrant	15	24
Temporary (i.e., work permit)	1.9	3

Appendix B

International and landed immigrant sample cover letter, consent form and consent form

Dear student,

I would like to thank you for taking the time to learn more about this survey.

Why your support is needed?
Your support will allow my research to further understand some of the issues that newcomers to Canada experience. People from around the world come to Canada to participate in Canadian society or to become Canadians. Often this involves becoming familiar with Canada and how Canadians interact with each other. By asking people from other countries and cultures how they function in Canada, we can learn how to support newcomers and make their experiences in Canada more successful.

What you will be asked to do?
In this survey, you will be asked to express your best understanding of typical Canadian values and social beliefs. Afterwards, you will be asked about your experiences in Canada and about your interactions with Canadians. You will be asked to record your personal preference for each question on a scale by circling the answer that best reflects your understanding of the question. There are no right or wrong answers for these questions. Your responses will be combined with other people's responses to get a general picture of how people adapt to Canadian society. This questionnaire will take about 30 minutes to complete.

If you decide to participate …
Please read and complete all of the following documents:

1. Consent form to Participate in Research Study
2. Raffle Entry Form for the $100 Draw
3. Survey

Once these documents have been completed, put these documents back in the research package, seal the envelope and return the package to where you originally picked-up the package or to:

Stryker Calvez
Department of Psychology, University of Saskatchewan
Arts Building, Room 154
9 Campus Drive
Saskatoon SK S7N 5A5

Any questions or concerns?
If you have any questions or concerns about the survey or questions within the survey, please contact Stryker Calvez at 306-262-4435 or stryker.calvez@usask.ca.

Thank you for your participation,
Stryker S. Calvez
Department of Psychology
University of Saskatchewan
Supervisor: Dr. Louise Alexitch

Consent Form for Adapting to Canada Questionnaire

People from around the world come to Canada to participate in Canadian society or to become Canadians. Often this involves becoming familiar with Canada and how Canadians interact with each other. One way of learning about Canada and how Canadians interact with each other is by asking people from other countries and cultures how they function in Canada. Researchers have found that different countries and cultures have different cultural values and beliefs. In this study we are interested in how international and immigrant students from different countries and cultures understand Canada and Canadians. This questionnaire will ask you to use your best understanding of typical Canadian values and social beliefs. In addition, you will be asked questions about your interactions with Canadians. This questionnaire will take about 30 minutes to complete.

You will be asked to record their personal preference for each question item on a scale by circling the answer that best reflects your understanding of the question. There are no right or wrong answers for these questions. Your responses will be combined with other people's responses to get a general picture of how people adapt to Canadian society. This will provide important information about how international and immigrant students understand Canadian values and social beliefs while living and adapting to Canada.

Your participation is voluntary and your responses will be kept confidential. You may skip any questions that you do not wish to complete, simply go to the next question and leave the question unanswered. If you choose to not complete the questionnaire, you may keep the questionnaire or you may return the questionnaire uncompleted and be entered into the raffle draw. The information that is collected by this study will be held for a minimum of 5 years in a secure cabinet in the laboratory of Dr. Louise Alexitch.

This research project was reviewed and approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board on October 19th, 2007. If you would like a copy of the results of this study, please contact Stryker Calvez at stryker.calvez@usask.ca.

If you have any additional questions or concerns, please contact any of the following:

Principal Investigator:
Stryker Calvez
Applied Social Psychology
University of Saskatchewan
Tel: 306-262-4435
Email: stryker.calvez@usask.ca

Supervisor:
Dr. Louise Alexitch
Applied Social Psychology
University of Saskatchewan
Tel: 306-966-5922
Email: alexitch@sask.usask.ca

If you have any questions about your rights as a participant, please contact the Ethics Office at (306) 966-2084.

Consent:

I have read and understood the description provided above. By signing the consent below, I consent to participate in the study described above, understanding that I may withdraw this consent at any time. I also understand that the responses are recorded anonymously; once I have submitted my results, it is not possible to connect these results to myself.

_____ _____

Participant signature Date

_____ _____

Researcher Signature Date

Research Raffle Raffle ID

Please complete this raffle form and hand it in when you return the completed questionnaire. This raffle form is designed so that all research participants can supply the information necessary to select and announce the winner of the $100 raffle draw without placing any personal information on your survey. This information will be removed from your survey when it is received in order to keep your survey responses confidential and anonymous. **You must complete this form in order to be entered in the raffle draw.**

First Name: _____ Last Name: _____

Email Address: _____ Phone Number: _____

------✂----------✂----------✂----------✂----------✂----------✂----------✂--------

Research Raffle Receipt Raffle ID

Please cut this half of the raffle form and keep it for your records. If you are announced as the winner, this receipt should be presented to redeem your $100 prize. Students from the University of Saskatchewan should go to the Department of Psychology office, located in the Arts Building, Room 154, to collect their winnings. Students from Saskatchewan Institute of Applied Science and Technology should go to the Department of Educational Services to collect their winnings. Good luck and thank you for your participation.

If you have any additional questions or concerns, please contact any of the following:

Principal Investigator:
Stryker Calvez
Applied Social Psychology
University of Saskatchewan
Tel: 306-262-4435
Email: stryker.calvez@usask.ca

Supervisor:
Dr. Louise Alexitch
Applied Social Psychology
University of Saskatchewan
Tel: 306-966-5922
Email: alexitch@sask.usask.ca

If you have any questions about your rights as a participant, please contact the Ethics Office at (306) 966-2084.

Appendix C

Portrait Values Questionnaire (PVQ)

SECTION I

Here we briefly describe some people. Please read each description and think about how much you believe each person is or is not like **Canadians in general**. Circle the response that shows how much the person in the description is like Canadians in general.

(PLEASE CIRCLE YOUR ANSWERS)

How much you believe each person is or is not like Canadians?	Very Much Like a Canadian	Like a Canadian	Some- what Like a Canadian	A Little Like a Canadian	Not Like a Canadian	Not Like a Canadian at All
1. Thinking up new ideas and being creative is important to Canadians. They like to do things in their own original way.	1	2	3	4	5	6
2. It is important to Canadians to be rich. They want to have a lot of money and expensive things.	1	2	3	4	5	6
3. Canadians thinks it is important that every person in the world be treated equally. They believe everyone should have equal opportunities in life.	1	2	3	4	5	6
4. It's very important to Canadians to show their abilities. They want people to admire what they do.	1	2	3	4	5	6
5. It is important to Canadians to live in secure surroundings. They avoid anything that might endanger their safety.	1	2	3	4	5	6
6. Canadians think it is important to do lots of different things in life. They always look for new things to try.	1	2	3	4	5	6
7. Canadians believe that people should do what they're told. They think people should follow rules at all times, even when no-one is watching.	1	2	3	4	5	6
8. It is important to Canadians to listen to people who are different from themselves. Even when they disagree with others, they still want to understand them.	1	2	3	4	5	6

How much you believe each person is or is not like Canadians?	Very Much Like a Canadian	Like a Canadian	Some- what Like a Canadian	A Little Like a Canadian	Not Like a Canadian	Not Like a Canadian at All
9. Canadians think it's important not to ask for more than what they have. They believe that people should be satisfied with what they have.	1	2	3	4	5	6
10. Canadians seek every chance they can to have fun. It is important to them to do things that give them pleasure.	1	2	3	4	5	6
11. It is important to Canadians to make their own decisions about what they do. They like to be free to plan and to choose their activities for themselves.	1	2	3	4	5	6
12. It's very important to Canadians to help the people around them. They want to care for other's well-being.	1	2	3	4	5	6
13. Being very successful is important to Canadians. They like to impress other people.	1	2	3	4	5	6
14. It is very important to Canadians that their country be safe. They think the state must be on watch against threats from within and without.	1	2	3	4	5	6
15. Canadians like to take risks. They are always looking for adventures.	1	2	3	4	5	6
16. It is important to Canadians always to behave properly. They want to avoid doing anything people would say is wrong.	1	2	3	4	5	6
17. It is important to Canadians to be in charge and tell others what to do. They want people to do what they say.	1	2	3	4	5	6
18. It is important to Canadians to be loyal to their friends. They want to devote themselves to people close to them.	1	2	3	4	5	6
19. Canadians strongly believe that people should care for nature. Looking after the environment is important to them.	1	2	3	4	5	6
20. Religious belief is important to Canadians. They try hard to do what their religion requires.	1	2	3	4	5	6

How much you believe each person is or is not like Canadians?	Very Much Like a Canadian	Like a Canadian	Some- what Like a Canadian	A Little Like a Canadian	Not Like a Canadian	Not Like a Canadian at All
21. It is important to Canadians that things be organized and clean. They really do not like things to be a mess.	1	2	3	4	5	6
22. Canadians think it's important to be interested in things. They like to be curious and to try to understand all sorts of things.	1	2	3	4	5	6
23. Canadians believe all the worlds' people should live in harmony. Promoting peace among all groups in the world is important to them.	1	2	3	4	5	6
24. Canadians thinks it is important to be ambitious. They want to show how capable they are.	1	2	3	4	5	6
25. Canadians think it is best to do things in traditional ways. It is important to them to keep up the customs they have learned.	1	2	3	4	5	6
26. Enjoying life's pleasures is important to Canadians. They like to 'spoil' themselves.	1	2	3	4	5	6
27. It is important to Canadians to respond to the needs of others. They try to support those they know.	1	2	3	4	5	6
28. Canadians believe they should always show respect to their parents and to older people. It is important to them to be obedient.	1	2	3	4	5	6
29. Canadians want everyone to be treated justly, even people they don't know. It is important to them to protect the weak in society.	1	2	3	4	5	6
30. Canadians likes surprises. It is important to them to have an exciting life.	1	2	3	4	5	6
31. Canadians try hard to avoid getting sick. Staying healthy is very important to them.	1	2	3	4	5	6
32. Getting ahead in life is important to Canadians. They strive to do better than others.	1	2	3	4	5	6
33. Forgiving people who have hurt them is important to Canadians. They try to see what is good in others and not to hold a grudge.	1	2	3	4	5	6

How much you believe each person is or is not like Canadians?	Very Much Like a Canadian	Like a Canadian	Some- what Like a Canadian	A Little Like a Canadian	Not Like a Canadian	Not Like a Canadian at All
34. It is important to Canadians to be independent. They like to rely on themselves.	1	2	3	4	5	6
35. Having a stable government is important to Canadians. They are concerned that the social order be protected.	1	2	3	4	5	6
36. It is important to Canadians to be polite to other people all the time. They try never to disturb or irritate others.	1	2	3	4	5	6
37. Canadians really want to enjoy life. Having a good time is very important to them.	1	2	3	4	5	6
38. It is important to Canadians to be humble and modest. They try not to draw attention to themselves.	1	2	3	4	5	6
39. Canadians always want to be the one who makes the decisions. They like to be the leader.	1	2	3	4	5	6
40. It is important to Canadians to adapt to nature and to fit into it. They believe that people should not change nature.	1	2	3	4	5	6

Note*. Wording for each item is the same for the Canadian sample, except the noun and/or pronoun were in first-person.*

Appendix D

Social Axiom Survey (SAS)

SECTION II

Here we briefly describe a belief that some people have. Please read each statement and then indicate the whether you think that **Canadians would** strongly believe, believe, no opinion to disbelieve, disbelieve or strongly disbelieve the statement.

(PLEASE CIRCLE YOUR ANSWERS)

Belief	Strongly Believe	Believe	No Opinion to Disbelieve	Disbelieve	Strongly Disbelieve
41. Powerful people tend to exploit others. Canadians would:	1	2	3	4	5
42. Power and status make people arrogant. Canadians would:	1	2	3	4	5
43. Kind-hearted people are easily bullied. Canadians would:	1	2	3	4	5
44. Significant achievement requires one to show no concern for the means needed for that achievement. Canadians would:	1	2	3	4	5
45. Kind-hearted people usually suffer losses. Canadians would:	1	2	3	4	5
46. Old people are usually stubborn and biased. Canadians would:	1	2	3	4	5
47. Young people are impulsive and unreliable. Canadians would:	1	2	3	4	5
48. It is easier to succeed if one knows how to take shortcuts. Canadians would:	1	2	3	4	5
49. Females need a better appearance than males. Canadians would:	1	2	3	4	5
50. It is rare to see a happy ending in real life. Canadians would:	1	2	3	4	5
51. People will stop working hard after they secure a comfortable life. Canadians would:	1	2	3	4	5
52. People deeply in love are usually blind. Canadians would:	1	2	3	4	5
53. To care about societal affairs only brings trouble for yourself. Canadians would:	1	2	3	4	5
54. Most people hope to be repaid after they help others. Canadians would:	1	2	3	4	5
55. Harsh laws can make people obey. Canadians would:	1	2	3	4	5

Belief	Strongly Believe	Believe	No Opinion to Disbelieve	Disbelieve	Strongly Disbelieve
56. One has to deal with matters according to the specific circumstances. Canadians would:	1	2	3	4	5
57. There is usually only one way to solve a problem. Canadians would:	1	2	3	4	5
58. Old people are a heavy burden on society. Canadians would:	1	2	3	4	5
59. The various social institutions in society are biased toward the rich. Canadians would:	1	2	3	4	5
60. Humility is dishonesty. Canadians would:	1	2	3	4	5
61. One's behaviours may be contrary to his or her true feelings. Canadians would:	1	2	3	4	5
62. People may have opposite behaviours on different occasions. Canadians would:	1	2	3	4	5
63. Human behaviour changes with the social context. Canadians would:	1	2	3	4	5
64. There are phenomena in the world that cannot be explained by science. Canadians would:	1	2	3	4	5
65. Current losses are not necessarily bad for one's long-term future. Canadians would:	1	2	3	4	5
66. To deal with things in a flexible way leads to success. Canadians would:	1	2	3	4	5
67. To plan for possible mistakes will result in fewer obstacles. Canadians would:	1	2	3	4	5
68. To experience various lifestyles is a way to enjoy life. Canadians would:	1	2	3	4	5
69. Individual effort makes little difference in the outcome. Canadians would:	1	2	3	4	5
70. One's appearance does not reflect one's character. Canadians would:	1	2	3	4	5
71. One will succeed if he/she really tries. Canadians would:	1	2	3	4	5
72. Adversity can be overcome by effort. Canadians would:	1	2	3	4	5
73. Every problem has a solution. Canadians would:	1	2	3	4	5

Belief	Strongly Believe	Believe	No Opinion to Disbelieve	Disbelieve	Strongly Disbelieve
74. Good deeds will be rewarded, and bad deeds will be punished. Canadians would:	1	2	3	4	5
75. Hard-working people will achieve more in the end. Canadians would:	1	2	3	4	5
76. One who does not know how to plan his or her future will eventually fail. Canadians would:	1	2	3	4	5
77. Knowledge is necessary for success. Canadians would:	1	2	3	4	5
78. The just will eventually defeat the wicked. Canadians would:	1	2	3	4	5
79. Competition brings about progress. Canadians would:	1	2	3	4	5
80. Social justice can be maintained if everyone cares about politics. Canadians would:	1	2	3	4	5
81. Failure is the beginning of success. Canadians would:	1	2	3	4	5
82. A modest person can make a good impression on people. Canadians would:	1	2	3	4	5
83. Caution helps avoid mistakes. Canadians would:	1	2	3	4	5
84. Mutual tolerance can lead to satisfactory human relationships. Canadians would:	1	2	3	4	5
85. Belief in a religion helps one understand the meaning of life. Canadians would:	1	2	3	4	5
86. Belief in a religion makes people good citizens. Canadians would:	1	2	3	4	5
87. Religious faith contributes to good mental health. Canadians would:	1	2	3	4	5
88. There is a supreme being controlling the universe. Canadians would:	1	2	3	4	5
89. Religious people are more likely to maintain moral standards. Canadians would:	1	2	3	4	5
90. Religion makes people escape from reality. Canadians would:	1	2	3	4	5
91. Ghosts or spirits are people's fantasy. Canadians would:	1	2	3	4	5
92. Religious beliefs lead to unscientific thinking. Canadians would:	1	2	3	4	5

Belief	Strongly Believe	Believe	No Opinion to Disbelieve	Disbelieve	Strongly Disbelieve
93. Individual characteristics, such as appearance and birthday, affect one's fate. Canadians would:	1	2	3	4	5
94. Good luck follows if one survives a disaster. Canadians would:	1	2	3	4	5
95. Fate determines one's successes and failures. Canadians would:	1	2	3	4	5
96. There are certain ways to help us improve our luck and avoid unlucky things. Canadians would:	1	2	3	4	5
97. There are many ways for people to predict what will happen in the future. Canadians would:	1	2	3	4	5
98. All things in the universe have been determined. Canadians would:	1	2	3	4	5
99. A person's talents are inborn. Canadians would:	1	2	3	4	5
100. Most disasters can be predicted. Canadians would:	1	2	3	4	5

Note*. Wording for each item is the same for the Canadian sample, except the noun and/or pronoun were in first-person.*

Appendix E

Scale of Psychological Well-being (PWB)

SECTION III

Here you are asked to **rate yourself** by indicating the extent to which you agree with the statement as descriptive of you. Respond using the one of the six responses: strongly disagree, moderately disagree, slightly disagree, slightly agree, moderately agree, or strongly agree.

(PLEASE CIRCLE YOUR ANSWERS)

Belief	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
101. I tend to be influenced by people with strong opinions.	1	2	3	4	5	6
102. In general, I feel I am in charge of the situation in which I live.	1	2	3	4	5	6
103. I think it is important to have new experiences that challenge how you think about yourself and the world.	1	2	3	4	5	6
104. I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
105. I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
106. In many ways, I feel disappointed about my achievements in life.	1	2	3	4	5	6
107. I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6
108. The demands of everyday life often get me down.	1	2	3	4	5	6
109. For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6
110. People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
111. Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6
112. I like most aspects of my personality.	1	2	3	4	5	6
113. I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6

Belief	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
114. I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
115. I gave up trying to make big improvements or changes in my life a long time ago.	1	2	3	4	5	6
116. Maintaining close relationships has been difficult and frustrating for me.	1	2	3	4	5	6
117. I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
118. When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5	6

Appendix F

Health Symptoms Scale (HSS)

SECTION IV

Here we have a list of common health symptoms. Please indicate approximately how much in the last few months you have experienced each particular problem by circling whether the problem has occurred not at all, a little bit, quite a bit, or extremely often.

(PLEASE CIRCLE YOUR ANSWERS)

	Health Symptom	Not at All	A Little Bit	Quite a Bit	Extremely Often
119.	Colds and /or Flu	1	2	3	4
120.	Digestive upsets	1	2	3	4
121.	Insomnia (problem falling asleep)	1	2	3	4
122.	Headaches	1	2	3	4
123.	Dizziness	1	2	3	4
124.	Back pain	1	2	3	4
125.	Feeling unduly tired	1	2	3	4
126.	Coughing spells and or sore throat	1	2	3	4
127.	Heart palpitations or elevated pulse rate	1	2	3	4
128.	Muscular pain or muscular tension	1	2	3	4
129.	High or low blood pressure	1	2	3	4
130.	Nausea	1	2	3	4
131.	Eye strain	1	2	3	4
132.	Chest pain	1	2	3	4
133.	Dry mouth	1	2	3	4
134.	Trembling hands	1	2	3	4
135.	Frequent urination or Diarrhoea	1	2	3	4
136.	Cold or sweaty hands or feet	1	2	3	4

Appendix G

Revised Social Situations Questionnaire (RSSQ)

SECTION V

Here we describe a social situation. Please indicate how much difficulty, if any, you have experienced in each social situation listed below in **Canada** and in your **home country**. When answering questions about **Canada**, relate your answers to your interaction with Canadian people and **NOT** to your interaction with people from your own country living in Canada. Circle the number that reflects the level of difficulty you have experienced using 1 for no difficulties at all through to 7 for great difficulty. If you have never experienced the situation described, please circle NE*.*

(PLEASE CIRCLE YOUR ANSWERS)

Social Situation	***In Canada***								***In Your Home Country***							
	No Difficulty at All	*2*	*3*	*Medium Difficulty*	*5*	*6*	*Great Difficulty*	*Never Experienced*	*No Difficulty at All*	*2*	*3*	*Medium Difficulty*	*5*	*6*	*Great Difficulty*	*Never Experienced*
137. Getting to know people well.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
138. Dealing with your landlord.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
139. Going to bars or clubs.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
140. Making friends.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
141. Talking to people you don't know well in a small party.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
142. Going out with someone you are sexually attracted to.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
143. Dealing with waiters in restaurants	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
144. Walking into a room full of people.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
145. Introducing yourself to new people, meeting strangers.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
146. Being with people you don't know very well.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
147. Starting a friendship.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
148. Inviting friends to go out.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
149. Making close friends.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE

Social Situation	In Canada								In Your Home Country							
	No Difficulty at All	2	3	Medium Difficulty	5	6	Great Difficulty	Never Experienced	No Difficulty at All	2	3	Medium Difficulty	5	6	Great Difficulty	Never Experienced
150. Talking about yourself and your feelings with others.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
151. Keeping the conversation going with other people.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
152. Attending a formal dinner.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
153. Complaining in public (e.g. about a dissatisfactory service).	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
154. Talking to a doctor about your health.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
155. Giving a speech for an audience.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
156. Being interviewed for something (e.g., a research assistant position).	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
157. Working as a teaching assistant (e.g., teaching a lab, a class).	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
158. Working as a research assistant for a professor a supervisor.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
159. Understanding jokes, humour or sarcasm.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
160. Dealing with angry people.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
161. Dealing with salespersons in stores.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
162. Apologizing to people if you have done something wrong.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
163. Becoming close to a person of the opposite sex.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
164. Going to university dances.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
165. Going to worship in a church, temple or mosque.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
166. Talking about serious thinks to people of your own age.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
167. Talking on the phone.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE

Social Situation	***In Canada***								***In Your Home Country***							
	No Difficulty at All	*2*	*3*	*Medium Difficulty*	*5*	*6*	*Great Difficulty*	*Never Experienced*	*No Difficulty at All*	*2*	*3*	*Medium Difficulty*	*5*	*6*	*Great Difficulty*	*Never Experienced*
168. Getting along with classmates.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
169. Keeping the conversations going with people you don't know well.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
170. Saying "no" if people ask you to do something you don't want to do.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE
171. Talking to people of the opposite sex.	1	2	3	4	5	6	7	NE	1	2	3	4	5	6	7	NE

Appendix H

Social Interaction Scale (SIS): Not used in analysis

SECTION VI

Here we describe a social interaction. Please indicate how frequently you engage in the following social interactions **in Canada**, with Canadians, with people from your own country, and with international students who do not share your nationality. Circle the number that reflects how often you have these interactions using 1 for never, 2 for rarely, 3 for sometimes, 4 for frequently and 5 for always.

(PLEASE CIRCLE YOUR ANSWERS)

	Social Interaction	***With Canadians***						***With People from your Home Country***						***With Other International Students***					
		Never	*Rarely*	*Sometimes*	*Frequently*	*Always*	*Never Experienced*	*Never*	*Rarely*	*Sometimes*	*Frequently*	*Always*	*Never Experienced*	*Never*	*Rarely*	*Sometimes*	*Frequently*	*Always*	*Never Experienced*
172.	Sharing meals (e.g., lunch, dinner).	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
173.	Discussing an academic problem.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
174.	Going to bars or clubs.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
175.	Discussing a personal problem.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
176.	Going to parties.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
177.	Going out with someone of the opposite sex.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
178.	Going to movies.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
179.	Discussing language problems.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
180.	Talking about your interests.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
181.	Talking about your academic work.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
182.	Going for walks.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
183.	Practicing sports.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
184.	Talking about your feelings.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
185.	Going for coffee.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
186.	Travelling.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
187.	Attending formal social occasions.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE

Social Interaction	***With Canadians***						***With People from your Home Country***						***With Other International Students***					
	Never	*Rarely*	*Sometimes*	*Frequently*	*Always*	*Never Experienced*	*Never*	*Rarely*	*Sometimes*	*Frequently*	*Always*	*Never Experienced*	*Never*	*Rarely*	*Sometimes*	*Frequently*	*Always*	*Never Experienced*
188. Going to restaurants.	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE
189. Visiting art galleries, museums	1	2	3	4	5	NE	1	2	3	4	5	NE	1	2	3	4	5	NE

Appendix I

Demographic questions

SECTION VII

The following questions will help the researchers understand your particular characteristics. Please answer the following questions:

190. Are you: ☐ Male ☐ Female 191. What is your current age? _____

192. What is your religion? _____

193. In what country did you live most of your childhood? _____

194. Did you speak English as a child? ☐ Yes ☐ No

195. Were you educated in English? ☐ Yes ☐ No

196. Please indicate how well you think your use of English is:

☐ Poor ☐ Fair ☐ Average ☐ Good ☐ Excellent

197. What education level did you attain in your country of origin?

☐ Elementary School ☐ Secondary School ☐ Bachelor Degree ☐ Other:

198. Are you currently an ☐ undergraduate student or a ☐ graduate student?

199. What age were you when you came to Canada? _____

200. Please indicate your immigration status **when you came to Canada**:

☐ Canadian Citizen ☐ Landed Immigrant ☐ Refugee Status ☐ Student Visa

☐ Other:

201. Please indicate your **current** immigration status:

☐ Canadian Citizen ☐ Landed Immigrant ☐ Refugee Status ☐ Student Visa ☐ Other:

202. Do you plan to live (or try and live) in Canada permanently when you have completed your studies?

☐ Yes ☐ No

203. Could you please indicate what degree or program you are currently working on?

_____

204. Would you please explain why you chose to come to Canada?

_____

THANK YOU FOR YOUR PARTICIPATION

Now, put the questionnaire, consent form and the raffle draw form into the envelope and return to:

1. International Student Centre (Place Riel)
2. The international student association that delivered this questionnaire
3. Stryker Calvez at the address found on the front of this questionnaire.

Appendix J

6-Factor Social Axiom solution: Rotated factor matrix without poor loading items

Items	Factor 1 Spiritual Well-being	Factor 2 Fate Control	Factor 3 Spiritual Complexity	Factor 4 Social Cynicism	Factor 5 Social Complexity	Factor 6 Reward for Application
SAS #47	.774					
SAS #45	.746					
SAS #46	.745					
SAS #49	.639					
SAS #48	.635		.516			
SAS #57		.532				
SAS #56		.508				
SAS #55		.506				
SAS #53		.500				
SAS #54		.494				
SAS #60		.418				
SAS #59		.391				
SAS #29		.360		.337		
SAS #04		.326				
SAS #09		.326				
SAS R51			.665			
SAS #24			.574			
SAS R52	.454		.516			
SAS #58		.363	.498			
SAS #41			.410			
SAS R50			.379			
SAS #43			-.326			
SAS #13				.490		

Note. Items loading with less than 10% variance (.32) were removed: SAS 09, 10, 12,14, 17, 18, 27, 28, 30, 33, 36, 37, 39 40, 43, and 44 were removed from the above matrix. R indicates reverse coding.

Appendix J (continued)

6 Factor Social Axiom solution: Rotated factor matrix without poor loading items

Items	Factor 1 Spiritual Well-being	Factor 2 Fate Control	Factor 3 Spiritual Complexity	Factor 4 Social Cynicism	Factor 5 Social Complexity	Factor 6 Reward for Application
SAS #06				.484		
SAS #01				.480		
SAS #03				.479		
SAS #16				.479		
SAS #08				.450		
SAS #02				.440		
SAS #05				.406		
SAS #07				.389		
SAS #11				.382		
SAS #19					.698	
SAS #20					.666	
SAS #21					.566	
SAS R22					.459	
SAS #42					.399	
SAS #44					.355	
SAS #23					.352	
SAS #34						.602
SAS #31						.444
SAS #38			.334			.442
SAS #32						.365
SAS #25						.362
SAS #26						.358
SAS #35						.341

Note. Items loading with less than 10% variance (.32) were removed: SAS 09, 10, 12,14, 17, 18, 27, 28, 30, 33, 36, 37, 39 40, 43, and 44 were removed from the above matrix. R indicates reverse coding.

Appendix K

Spearman correlational matrix of demographic, independent and dependent variables

Variables	1	2	3	4	5	6
1. Age						
2. Geographic Representation	-.015					
3. Self-rated English Proficiency	.024	-.472**				
4. Undergrad - Grad Student	.667**	-.087	.013			
5. Intention to Stay	-.011	-.166*	.098	-.047		
6. Time in Canada	.222**	.032	.143	-.059	.128	
Openness to Change – Conservation	-.010	.090	-.046	.069	.006	-.041
Self-Transcendence – Enhancement	-.025	-.090	.022	-.029	-.099	.012
Spiritual Well-being	.018	.045	.000	-.001	-.010	-.070
Fate Control	-.077	-.117	-.034	.054	.021	-.202*
Social Cynicism	-.092	-.250**	.061	.061	-.096	-.100
Social Complexity	-.051	-.104	.024	-.073	.024	-.202*
Reward for Application	.024	.075	-.075	-.040	.004	-.070
PWB	.058	-.174*	.017	.117	-.033	-.093
HSS	-.038	-.007	.050	-.095	.131	.124
RSSQ	.076	.205*	-.127	-.031	-.163*	.044

*** p< 0.01 and *p< 0.05 .*

Appendix L

Post-hoc hierarchical regression analysis for the independent variables predicting Social Situation Difficulty (n= 148)

Variables	*B*	*SE B*	β	R^2	ΔR^2
Step 1				0.01	0.01
Constant	0.59	0.12			
Openness to Change – Conservation	-0.21	0.17	-0.17		
Self-Transcendence – Enhancement	-0.11	0.17	-0.10		
Step 2				0.10	0.08*
Constant	0.52	0.17			
Openness to Change – Conservation	-0.11	0.18	-0.08		
Self-Transcendence – Enhancement	-0.01	0.17	-0.01		
Spiritual Well-being	-0.21	0.12	-0.15		
Fate Control	0.10	0.13	0.08		
Social Cynicism	-0.13	0.11	-0.12		
Social Complexity	0.08	0.09	0.08		
Reward for Application	0.31	0.12	0.23*		

Note. R^2*= 0.10 ; F*(7,147)= 2.11, *p*= 0.047
** *p*< 0.01 and **p*< 0.05.